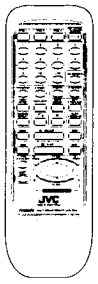
JVC

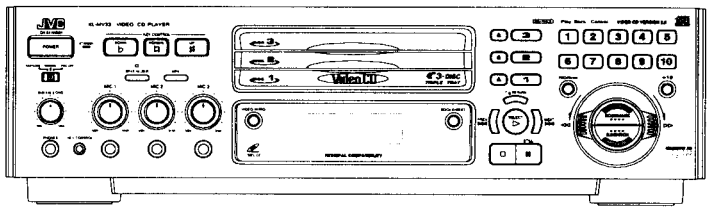
SERVICE MANUAL

VIDEO CD PLAYER

XL-MV33BK/XL-MV55GD

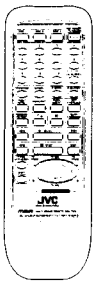


XL-MV33BK

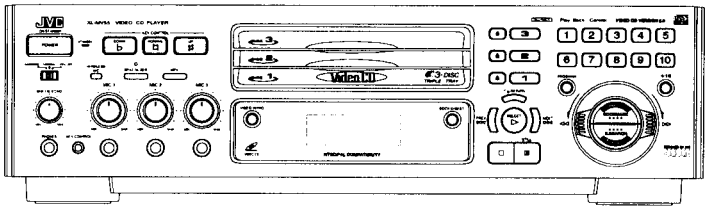


Area Suffix (XL-MV33BK)

UB	Hong Kong
UF	China
US	Singapore
UT	Taiwan
U	Universal Except All of Above



XL-MV55GD



Area Suffix (XL-MV55GD)

UB	Hong Kong
UF	China
UT	Taiwan
U	Universal Except All of Above

SPATIALIZER® 3-D STEREO PlayBack Control Video CD

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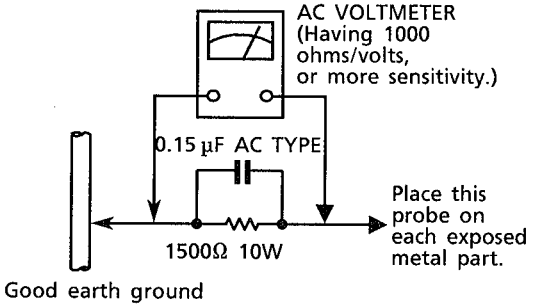
No. 20642
JUN. 1997

Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute repalcement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage currnet check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet , particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10 W resistor paralleled by a 0.15 µF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and meausre the AC voltage across the resistor.
     Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

Important for Laser Products

1. CLASS 1 LASER PRODUCT
2. DANGER : Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. CAUTION : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.
4. CAUTION : The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.
5. CAUTION : If safety switches malfunction, the laser is able to function.
6. CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

VARNING : Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

ADVARSEL : Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

ADVARSEL : Usynlig laserstråling ved åpning, når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

REPRODUCTION AND POSITION OF LABELS

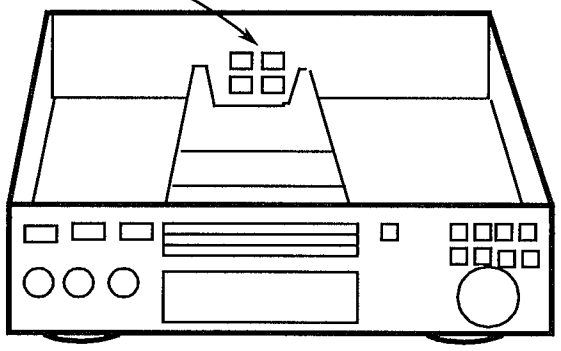
WARNING LABEL
(Except for the U. S. A.)

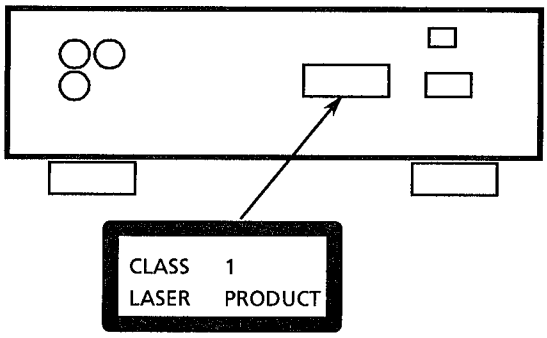
DANGER: invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e)

VARNING: Osynling laserstråling när denna del ä öppnad och spärren är urkoppled. Betrakta ej stålen. (s)

ADVARSEL: Usynling laserstråling ved åbning, når sikkerhedsafbrydere er ude at funktion. Undgåudsættelse for stråling. (d)

VARO: Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen. (f)





CLASSIFICATION LABEL
(Except for the U. S. A. and Canada)

We would like to thank you for purchasing one of our JVC products. Before connecting this unit to the wall outlet, read the instructions carefully to ensure that you obtain the best possible performance. If you have any questions, consult your JVC dealer.

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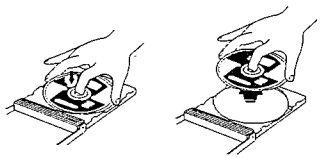
Care and handling of compact discs

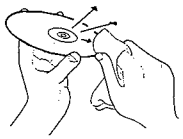
How to handle CDs
When handling a compact disc, do not touch the surface of the disc (reflective silver side — the side without the label).
Since compact discs are made of plastic, they are easily damaged. If a disc gets dirty, dusty, scratched or warped, the sound will not be picked up correctly and, in addition, such a disc may cause the CD player to malfunction.



Care of the label side
Do not damage the label side, stick paper or use any adhesive on its surface.

Storage
Make sure that discs are kept in their cases. If discs are piled one on top of another without their protective cases, they can be damaged. Do not put discs in a location where they may be exposed to direct sunlight, or in a place where the humidity or temperature is high. Avoid leaving discs in your car!

Maintenance of discs
If there are fingerprints or dirt adhering to a disc, wipe it with a soft dry cloth, moving from the center outwards.
If a disc is difficult to clean, wipe with a cloth moistened with water. Never use record cleaners, petrol, alcohol or any anti-static agents.



CAUTION
Sometimes during play noise or images may be garbled. This is sometimes due to the disc. (It may not be up to industry standards.) These symptom are caused by the discs, not by the malfunction of the Player.

Which compact discs can be used?
Many types of compact discs are sold for a variety of uses. The Video CD Player can play the following compact discs:

- **Video CD**
  for audio and video (moving picture) reproduction, including multiplex sound.
- **Video CD with Playback Control function**
  featuring menu-type operation and super-fine still pictures for audio and video (moving picture) reproduction, including multiplex sound.
- **CD Graphics (CD-G)**
  for audio and video (still picture) reproduction, including multiplex sound.
- **Digital Audio CD**
  including single discs for audio reproduction.

CDs you can't play back
Do not play back CD-ROMs, DVDs, or CD-is on this equipment. Doing so may generate a noise which can damage your speakers.

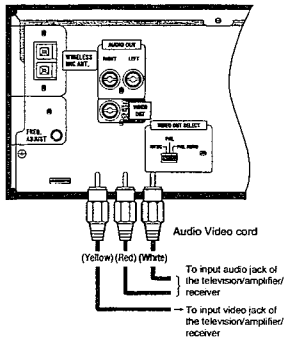
Using the remote control
The remote control is ready to use when its batteries are installed properly.
To use it, point its infrared light-emitting window toward the display window of the player and press a button. The operating range of the remote control is up to about seven meters in front of the player and within about 30 degrees to each side — with nothing between the remote control and the player interrupting the beam path.
If pressing a button on the remote control does not produce any response, check to make sure it is pointed correctly and try again. If it still does not function, check the batteries.

Basic connections

The Video CD Player must be connected directly to a television set or an amplifier that is connected to a television or monitor. The television set or the amplifier must have audio input jacks for right and left channels and a video input jack.
Select a level, dry location free of dust and vibration, having a temperature maintained between 5 and 35°C (41 and 95°F).

Connecting the player to a TV or amplifier using the Audio Video cord

First connect the Audio Video cord — before connecting the AC power cord.
Firmly insert the yellow pin plug of the Audio Video cord in the yellow VIDEO OUT jack on the rear panel of the player; the red pin plug in the red AUDIO OUT (RIGHT) jack; and the white pin plug in the white AUDIO OUT (LEFT) jack. (The RIGHT and LEFT output jacks are for the right and left audio channels.)
Then make sure that the television, amplifier or receiver is turned off, disconnect the AC power cord, and firmly insert the pin plugs at the other end of the Audio Video cord into the matching video and audio INPUT jacks.


Audio Video cord
(Yellow) (Red) (White)
To input audio jack of the television/amplifier/ receiver
To input video jack of the television/amplifier/ receiver

(WIRELESS MIC ANT. jack and FREQ. ADJUST apply only to XL-MV55GD model)

Video out select

Set the VIDEO OUT SELECT switch on the rear panel to NTSC, PAL, or PAL AUTO mode according to your television system.

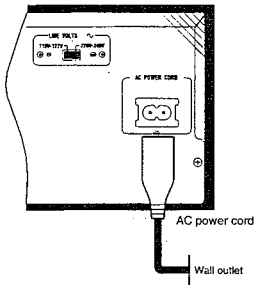
NTSC ..... for NTSC exclusive TV
PAL ..... for PAL exclusive TV
PAL AUTO ..... for Multisystem TV
PAL AUTO detects the formula of the disc (NTSC/ PAL) automatically and plays the image on the screen correctly.

Notes
- When you play an NTSC disc in PAL AUTO mode on a PAL exclusive TV, the image may be distorted.
  If the signal doesn't synchronize, change the mode to "PAL".
- Select the mode before you play the disc. If you change the mode during play, images may get distorted. In this situation stop the player and reset the mode.
- When you play an NTSC disc in PAL AUTO mode on a Multi system TV, the image may blink for a moment. This symptom is caused by the Player detecting the formula of the disc, not by a malfunction of the Player.

Connecting the power cord

IMPORTANT
Check the setting of the LINE VOLTS switch on the rear panel of the player. Change the setting if the switch is not set for the main voltage supplied to your home.
With the LINE VOLTAGE switch correctly set and the audio-video connectors connected, insert the smaller plug of the power cord firmly into the AC POWER CORD socket on the rear panel of the player.

When the power cord is connected, the STANDBY indicator on the left-hand side of the player's front panel comes on. [See "Overview of Controls" for a description of the controls on the player.]



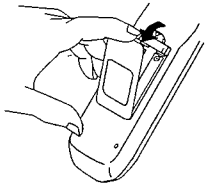
Line voltage alteration
What is your power main voltage? Is it between 115 and 127V, or 220 and 240V? If the LINE VOLTS switch on the rear panel of the player is not set to your power main voltage, disconnect the power cord if it is already connected, and change the switch setting accordingly.

Installing batteries

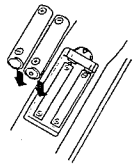
Putting batteries in the remote control

The battery compartment is located on the back of the remote control.

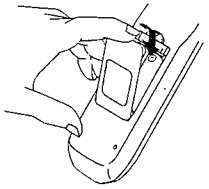
1. **Insert a finger in the recess under the battery compartment cover, and pull off the cover.**



2. **Place the two accessory R6P (SUM-3)/AA (15F) batteries in the remote control according to the polarity markings ("+" and "–") inside the compartment and on the batteries.**



3. **Insert the two tabs of the cover in their respective slots, and snap the cover in place.**



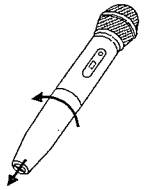
The batteries last about one year with normal use. If function of the remote control become erratic, replace the batteries.

Precautions for the safe use of batteries
Observe the following precautions for the safe use of batteries. Their life will be shortened, they may burst or their contents may leak if they are used improperly.

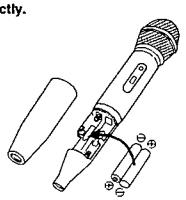
- Remove batteries from the remote control if it is not going to be used for a long period of time.
- Remove dead batteries and dispose of them properly.
- Never leave dead batteries lying around, take them apart, mix them with other refuse, or throw them into an incinerator.
- Never touch liquid that has leaked out of a battery.
- Do not mix new and old batteries, or batteries of different types, when replacing them.

Putting batteries in the microphone (XL-MV55GD only)

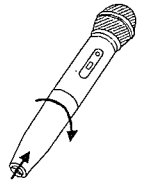
1. **Unscrew and remove the battery compartment cap as illustrated.**



2. **Insert 2 "R6P (SUM-3)/AA(15F)"-size batteries (provided), oriented correctly.**



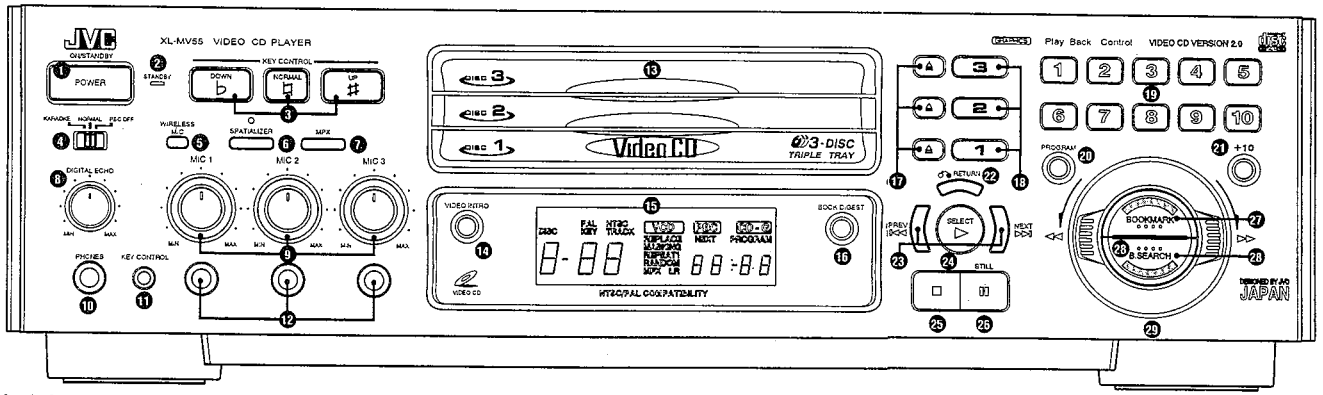
3. **Screw the cap back on as illustrated.**



OVERVIEW OF CONTROLS

The following is an explanation of the the basic function of controls on the front panel of the Player and the remote control. The function of some controls may be restricted in actual use depending on the on-going operations. The remote control has twelve (12) unique function buttons in addition to those on the player.

The controls with Identical names on the Player and on the remote control have the same function and are used in the same manner.



Left front panel of the Player

(Controls marked (R) have equivalents on the remote control.)

❶ **POWER button (R)**
Turns the power on and off.

❷ **STANDBY indicator (Red)**
Lights when the power cord is connected and the power is turned off. The STANDBY indicator is not lit when the player is turned on.

❸ **KEY CONTROL button (R)**
Transposes the music key.
DOWN ♭ button: used to flatten by a half tone.
NORMAL ♮ button: returns to original key tone.
UP # button: used to sharpen by a half tone.

❹ **MODE switch**
Switches the KARAOKE/NORMAL/PBC OFF mode.
KARAOKE mode: one track playing mode.
NORMAL mode: continuous plural tracks playing mode. Required also for the Playback Control (PBC) function.
PBC OFF mode: inhibits the Playback Control (PBC) function of the video CD.

❺ **WIRELESS MIC button with indicator (XL-MV55GD only)**
Activates/deactivates the wireless microphone. When the WIRELESS MIC button is pressed, the indicator is lit as follows.
green: tuning accomplished.
red: not successful. For tuning, see page 16.

❻ **SPATIALIZER button (R)**
Changes the sound mode. (See page 13.)

❼ **MPX button (R)**
Activates the multiplex function, which switches to NORMAL (stereo), L-ch monaural and R-ch monaural.

❽ **DIGITAL ECHO knob**
Adjusts the degree of the echo effect for the microphone (1 through 3) and the wireless microphone voice.

❾ **MIC1 to MIC3 knobs**
Adjusts volume of the microphone corresponding to MIC number. The MIC 3 knob provides simultaneous adjustment of the wireless microphone's volume (only for the XL-MV55GD).

❿ **PHONE jack**
Used for connecting stereo headphones. The volume is set to a predetermined level and is not adjustable.

⓫ **KEY CONTROL jack**
Used for connecting a microphone with key control function.

⓬ **MIC jacks (1 through 3)**
Used for connecting microphones (1 through 3). The jacks correspond to MIC 1 to 3 volume knobs located above.

Center front panel of the Player

⓭ **DISC1 to DISC3 trays**
Used to load discs. To insert/remove one or up to three (3) discs, press the ▲ OPEN/CLOSE button located at the right of the tray corresponding to disc number.

⓮ **VIDEO INTRO button (R)**
Applies to video CDs only. The introductory five (5) seconds of tracks on a video CD are displayed on the television screen in order to present the contents of the video CD.

⓯ **Display window**
Shows information about the status of operation.

⓰ **BOOK DIGEST button (R)**
Displays video segments you marked with the Bookmark function. (See page 14.)

Right front panel of the Player

⓱ **▲ (OPEN/CLOSE) buttons (Disc number 1 to 3)**
Used to open and close disc trays 1 to 3 respectively. When, after opening the DISC1 tray, another ▲ (OPEN/CLOSE) button is pressed, the DISC1 tray is first closed, then the other DISC tray selected is opened.

⓲ **DISC1 through DISC3 buttons with Indicators (Green) (R)**
Plays the disc of the number indicated on the button. As soon as the disc begins playing, the indicator blinks.

⓳ **Number keys (1 to 10) (R)**
Used to specify a track number for playing, changing, or programming. To operate numbers above ten (10), press the +10 button once. The number keys (1 to 10) are then assigned the numbers 11 to 20 instead of 1 to 10. The maximum key number assignment is 99. In PBC function operation, the number keys are additionally utilized for the selection of menu items. See page 18 "Operation of Playback Control function".

⓴ **PROGRAM button (R)**
Any desired sequence of tracks can be programmed with the number keys and the +10 button. (On the remote control use +10) The program button cannot be used while the Playback Control function is activated.

㉑ **+10 button (R)**
Used to shift the numbers assigned to the number keys to 11 or higher (maximum 99).

㉒ **↶ RETURN button (R)**
Utilized for operation with the PBC function. This button is used to return to a menu screen during play.

㉓ **|◄◄ / ►►| PREV / NEXT buttons (R)**
During operation with the Playback Control function
Invokes previous or next screen.
During operation without the Playback Control function
Skips forward or backward quickly from current track being played.

㉔ **► SELECT (PLAY) button (R)**
Starts to play the disc with/without the Playback Control function.

㉕ **■ (STOP) button (R)**
Stops play.

㉖ **II STILL (PAUSE) button (R)**
Temporarily suspends playing. Video motion freezes and audio reproduction stops. Pressing the button repeatedly advances the picture frame-by-frame. (Video CD only)

㉗ **BOOKMARK button (R)**
Places a "bookmark" at video segments you want to find later for almost instant replay. (See page 14.)

㉘ **B. SEARCH button (R)**
Retrieves video segments which you marked with a bookmark. (See page 14.)

㉙ **Jog/Shuttle dial**
Used for fast-forward, fast rewind, and still play.

Remote control unit

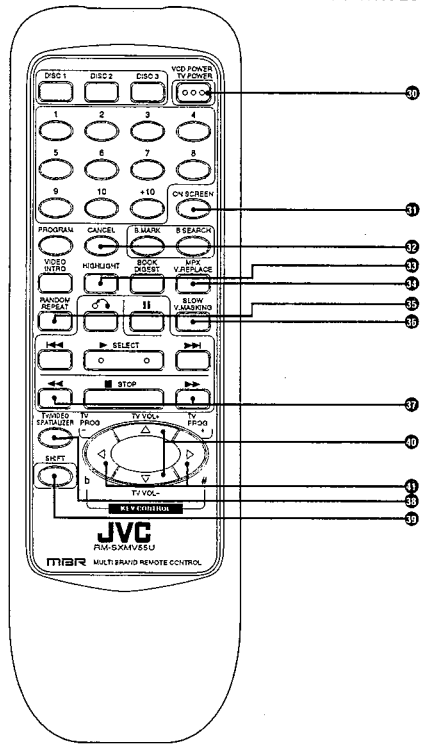
㉚ **VCD POWER/TV POWER button**
Turns the player on and off.
When pressed after you hold down the SHIFT button, turns the TV on or off.

㉛ **ON SCREEN button**
Controls whether or not control and operation status are displayed on the television screen or monitor.

㉜ **CANCEL button**
Cancels the latest track you have programmed. The latest programmed track is canceled whenever you press this button. Also used to cancel a bookmark.

㉝ **HIGHLIGHT button**
Applies to a video CD to see highlights of a track. Displays the first (5) seconds of each of nine (9) equal-time segments of the track.

㉞ **MPX/V.REPLACE button**
Activates the multiplex function. (See page 12)
When pressed after you hold down the SHIFT button, activates the vocal replace function, inserting your voice in place of the disc vocals.



㉟ **RANDOM/REPEAT button**
Changes the disc track program to a random sequence from disc 1 through 3 respectively.
When pressed after you hold down the SHIFT button, repeats a track or inserted discs from 1 to 3.

㊱ **SLOW/V.MASKING button**
Starts slow-motion playback.
When pressed after you hold down the SHIFT button, activates the voice masking function, playing the music with low-level vocals.

㊲ **◄◄ / ►► MANUAL SEARCH button**
Shifts the playing location backward and forward quickly. Holding down the button causes it to go much faster.

㊳ **TV/VIDEO/SPATIALIZER button**
Used to preset the remote control unit, to control some functions on your TV set. (See page 10.)
When pressed after you hold down the SHIFT button, changes the sound ambiance. (See page 13.)

㊴ **SHIFT button**
Used together with other keys for various functions. (See page 10)

㊵ **TV VOL + / TV VOL – keys**
Turns the TV volume up or down.

㊶ **TV PROG – / TV PROG + / KEY CONTROL**
Changes the television channel.
When pressed after you hold down the SHIFT button, changes the key in which the music plays. (See page 17.)

Now you can play a variety of video CDs!!

Overview of the three modes

This Player has three (3) modes: KARAOKE, NORMAL, and PBC OFF mode. These are selected by the MODE switch. This permits various ways of playing a video CD.

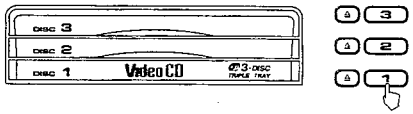
KARAOKE mode: One track playing mode. Whenever one track has completed play, the Player stops.
NORMAL mode: Continuous plural track playing mode. The Player plays tracks continuously in the order they appear on the disc.
PBC OFF mode: This mode is identical to the NORMAL mode, except that the PBC function is inhibited.

To set the mode, move the MODE switch on the left side of the front panel.

Triple disc tray usage

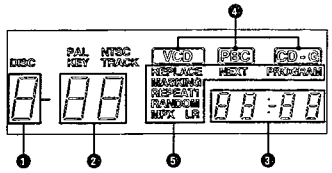
Up to three (3) discs can be loaded in the Player. You may insert a disc into any of the disc trays 1 through 3.
If you want to play only a specified disc, press the corresponding disc 1, 2 or 3 button located to the right of the ▲ (OPEN/CLOSE) button.

When three discs are inserted, basic order of playing is as follows.
- Pressing DISC 1: DISC 1 → DISC 2 → DISC 3 → STOP
- Pressing DISC 2: DISC 2 → DISC 3 → DISC 1 → STOP
- Pressing DISC 3: DISC 3 → DISC 1 → DISC 2 → STOP



Display window

The display window indicates many aspects of control and operation status.

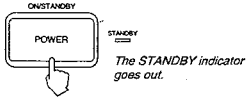


❶ Shows the disc number being played.
❷ Shows mainly the total number of tracks and the track number being played.
❸ Shows mainly the cumulative time (minutes and seconds) of the track. Afterward, total time of the disc is displayed.
❹ The combination of VCD, PBC, and CD-G indicators shows the type of disc being played.
❺ Each indicator in this area lights when the corresponding function is activated.

Preparation for playing

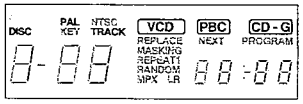
Turn on the television set, amplifier or receiver to which the Player is connected. Then select the proper channel and mode to operate the Player, and set the sound volume to a reasonable level.

Press the POWER button on the front panel or remote control.



The STANDBY indicator goes out.

The display window shows the initial information as shown below.



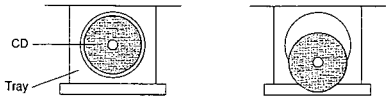
Easy start up
Without pressing the POWER button you can start up the Player by pressing ► SELECT button or disc buttons.

Inserting/removing disc(s)

Press the ▲ (OPEN/CLOSE) button (1 through 3) to open the disc tray. Then place the disc in the round recess of the tray with label side up. To close the tray, press the ▲ (OPEN/CLOSE) button again.

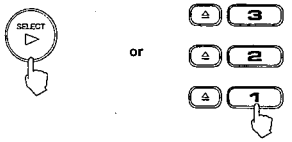
If you press the ▲ (OPEN/CLOSE) button of the disc which is playing, the Player stops and then opens the tray.
If you press the ▲ (OPEN/CLOSE) button of a disc that is not being played, you can change discs without stopping play.

Note
- When loading a disc in the disc tray, be sure to position the disc inside the recess. Otherwise, the disc will be damaged when the disc tray is closed, and the disc cannot be removed from the unit.



Starting to play disc(s)

Press the ► SELECT (PLAY) button. The Player starts to play from the disc indicated in the display window.
Press one of the DISC 1 through 3 buttons and the Player plays the disc you pressed, from the 1st track. For individual track selection, use the number keys or the I◄◄/ ►►I PREV/NEXT buttons.

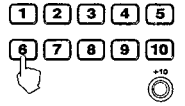


When you start play, the Display window shows the disc number and the track number being played.
During play, the indicator on the DISC button blinks.
If the PBC function is activated, the display window shows "Pb" until you play a track, and the television screen shows the initial menu, DISC number, and "PBC". See page 18, "Operation of Playback Control function".
When you press ► SELECT button during play, the disc will restart from the beginning of the track except when the PBC function is activated.

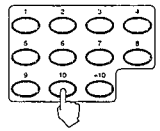
Using number keys

Press the number keys to select numbers.

On the Player ..... 1 to 10 and +10 key
Example: For number 5, press 5. For number 15, press +10, then 5. For number 20, press +10 button, then 10. For number 32, press +10, three times, then 2.



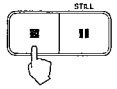
On the remote control ..... 1 to 10 and +10 key
Select numbers as described above.



Note
- When you press the number keys, the track will start playing without pressing ► SELECT button.

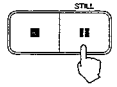
Stopping play

Press the ■ (STOP) button to stop play at any time.



Pausing play

Press the ⏸ STILL (PAUSE) button to temporarily suspend play.

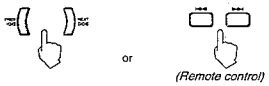


Notes

- When the ⏸ STILL (PAUSE) button is pressed once, "PAUSE" appears on the television screen, the video motion freezes and the sound is turned off. The still picture advances frame-by-frame each time the ⏸ STILL (PAUSE) button is pressed, or the shuttle dial is rotated to the right. This frame-by-frame function is effective only for video CDs.
- To release the pause, press the ► SELECT or blinking DISC 1 through 3 button.
- During "PAUSE" the time counter on the display will blink.

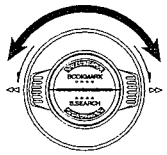
Auto search/Manual search

On the Player, during play, pressing the I◄◄ button once causes the Player to replay the current track from the beginning. Pressing the ►►I button once causes the Player to skip to the next track. The current position on the disc is displayed on the television screen.



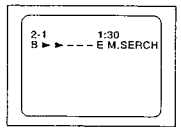
(Remote control)

Rotating the shuttle dial to the right causes the disc to fast forward. Rotating it to the left causes it to fast reverse.



On the remote control, holding down the ◄◄/►► buttons causes the disc to fast forward or reverse.
Continuing to hold down the buttons causes it to search much faster.

(Remote control)



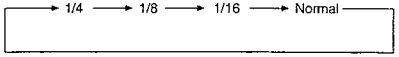
(Television screen)

Note

- In some circumstances, this function is not available when the PBC function is activated.
- The angle at which you hold the shuttle dial determines the manual search speed.

Slow-motion playback on the remote control unit

Press the SLOW/V.MASKING button to play in slow-motion. By pressing the SLOW/V.MASKING button consecutively, the playback speeds are cycled as shown below.



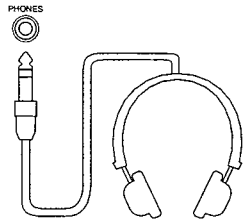
Note

- This function can only be used when playing a Video CD.

Using the remote control

Using stereo headphones

Connecting stereo headphones
Connect stereo headphones to the PHONES jack at the lower-left of the front panel. The volume level is fixed and cannot be adjusted.



Presetting the remote control to operate your own TV

You can use the Player's remote control unit to control some functions on your TV set (e.g., turning the TV on and off, adjusting volume, or selecting channels). First, though, you must preset the remote control to make it compatible with your TV.

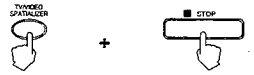
Operation

1. **Check the Preset Code Table (page 10) to determine the two-digit brand code number for your TV.**
2. **While holding down the TV/VIDEO/SPATIALIZER button on the remote control, press the Number keys to insert the two-digit brand code number. (For example, if the code number is "28", press Number key 2, then 8. If the first digit is a "0", press 10. Thus, if the code number is "09", press Number key 10, then 9. If the code number is "10", press Number key 1, then 10. If it is "20", press Number key 2, then 10.)**

Notes

- Before the remote control unit leaves the factory, the brand code number is set as No. 01 (JVC).
- Depending on your television set's age and other factors, brand code numbers may be different from those shown in the table. In such a case, try out other codes until you find one that corresponds to your television.

3. **While still holding down the TV/VIDEO/SPATIALIZER button, press the STOP button on the remote control.**



4. **The TV is turned off if the code number is correct. Repeat the procedure from the beginning if you weren't successful the first time.**

Using the SHIFT button on the remote control unit

You can control other functions with the remote control, simply by holding down the SHIFT button while pressing another button. Some of these functions are useful for Karaoke and Video CD playing, others for controlling the TV.

■ **SHIFT button functions for Karaoke and Video CD playing**

SHIFT + MPX ⇒ VOCAL REPLACE

SHIFT + RANDOM ⇒ REPEAT
Push RANDOM several times to toggle the repeat function:
ALL DISC → 1 TRACK → OFF

SHIFT + SLOW ⇒ VOCAL MASKING

SHIFT + TV/VIDEO ⇒ SPATIALIZER
Push TV/VIDEO several times to toggle the SPATIALIZER function:
SPATIALIZER H → SPATIALIZER L → OFF

SHIFT + TV PROG – ⇒ KEY CONTROL (♭)

SHIFT + TV PROG + ⇒ KEY CONTROL (#)

■ **SHIFT button functions to control the TV**

SHIFT + VCD POWER ⇒ Turns the TV on and off

SHIFT + 1 ⇒ TV Channel 1

SHIFT + 2 ⇒ TV Channel 2
⋮

SHIFT + 10 ⇒ TV Channel 0*

SHIFT + ON SCREEN ⇒ 1 - (The first digit of a TV Channel number 10 to 19. Push a Number key to insert the second digit.)*

SHIFT + B.SEARCH ⇒ 2 - (The first digit of a TV Channel number 20 to 29. Push a Number key to insert the second digit.)*

SHIFT + +10 ⇒ -/- - (To change a one - digit or to change a two - digit TV channel number, using a Number key.)*

SHIFT + B.MARK ⇒ ENTER (Push after choosing a channel. This function registers the channel you have chosen.)*

Note

- The asterisk * indicates that these operations do not work for some manufacturers' television sets.

Preset code table

No.	Television manufacturer
01	JVC
02	PANASONIC
03	SONY
04	SHARP
05	TOSHIBA/BEIJING/CHANGHONG
06	MITSUBISHI/CHANGHONG
07	HITACHI
08	SANYO
09	FUNAI
10	AIWA
11	DAEOO
12	SAMSUNG
13	LG (GOLDSTAR)
14	THOMSON
15	FERGUSON
16	PHILIPS/TCL/CHANGHONG
17	GRUNDIG
18	ITT
19	MIVER
20	FINLUX
21	NOKIA
22	NEC
23	JINXING/PEONY1
24	PEONY2
25	PEONY3/CHANGHONG
26	KONKA
27	PEIJIN/NOBLEX
28	TCL

VARIOUS UNIQUE FUNCTIONS

Various functions can enhance your enjoyment

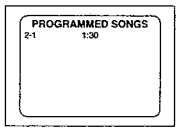
Display of operations status

Preparation
This function is controlled by the remote control.

Operation
Press the ON SCREEN button on the remote control. By pressing the ON SCREEN button, the following information may be easily and quickly displayed or removed from the television screen.

Time, Echo effect, Key control, Program, Repeat, Random, Multiplexing, Vocal replace, Vocal masking, Bookmark, etc.

(Remote control)



(Television screen)

Programming the track sequence you want

Preparation
It is not possible to enter programming mode during play. If playing, stop the player with the ■ STOP button.

Operation
1. **Press the PROGRAM button to enter the programming mode. PROGRAM is displayed in the Display Window.**

2. **Specify the disc by the DISC (1 through 3) button and then the track by the number keys successively. You can program up to nine (9) tracks by repeating this procedure.**
3. **To play the programmed tracks press the ► SELECT button.**

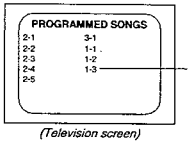
Notes

- The track number playing, next track programmed, and number of programmed tracks are displayed from the left-top of the television screen. You may use the ON SCREEN button to delete this information.
- Once the programmed track is played, it is deleted from the program.
- You may continue to program even while the disc is playing.

Canceling a programmed track

Operation
There are three (3) canceling functions (canceling the last programmed track, canceling the current track, canceling the next track to be played).

- **To cancel the last programmed track press the CANCEL button on the remote control and the last programmed track will be canceled. This can be done while a disc is playing.**



The number located lowest is the last track programmed.

(Television screen)

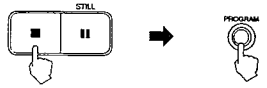
- **To cancel the current track press ■ STOP button.**
- **To cancel the next track, wait until the current track has finished and press the ►►I button and the next track will be canceled and the unit will go to the next programmed track.**

Note

- To verify the tracks you programmed, stop the Player and see ON SCREEN information

Clearing a program

To delete all programmed tracks you have entered, press the ■ STOP button and then the PROGRAM button. "PROG OFF" will be displayed on the television screen.



Note

- The Player does not cancel the track program even if the ■ (STOP) button is pressed. Pressing the ► SELECT (PLAY) button again causes the Player to resume playing from the next track.

Repeating tracks

It is possible to repeat all discs or only a single track.

Preparation
This function is controlled by the remote control.

Operation
Hold down the SHIFT button while you press the RANDOM/REPEAT button on the remote control. Channel REPEAT modes are cycled as shown below.

(Remote control) *(Display window)*

(Television screen)

Notes
- When playing a programmed sequence of tracks, only one track repeat is available.
- Only REPEAT1 and REPEAT OFF are available in KARAOKE mode.
- The Repeat function is not available when the player is set to PBC ON.
- Only REPEAT ALL is available when the player is in RANDOM mode.
- You cannot repeat the segment between bookmarks.

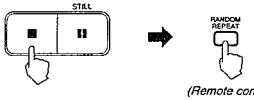
Randomly playing tracks

Preparations
- This function is controlled by the remote control.
- The RANDOM button is effective only in NORMAL or PBC OFF mode.
- This function plays tracks randomly from one disc.

Operation
1. **Stop the Player.**
2. **Press the RANDOM/REPEAT button and random playing will start.**

(Remote control)

3. **To cancel random playing, after stopping the Player (■ STOP button), press the RANDOM/REPEAT button again.**



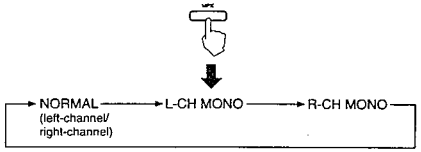
(Remote control)

Note
- Random is not effective in program or KARAOKE mode.

Playing a multiplex sound CD

This function is used for multiplex sound discs.

Operation
By pressing the MPX button consecutively, channel multiplexing modes are cycled as shown below.



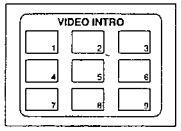
(Television screen)

Viewing the VIDEO INTRO of a video CD

Preparation
When you play a video CD with the Playback Control function, the mode switch should be in the PBC OFF mode or KARAOKE mode.

Operation
1. **Play the disc you want to see a digest of.**
2. **Press the VIDEO INTRO button on the Player or the remote control just after starting disc play. Then the Player starts to display in sequence the first five (5) seconds and track numbers of all tracks on the disc.**

3. **To select a track during digest display, press the number key corresponding to the item number on the television screen.**



(Television screen)

Programming during VIDEO INTRO

Operation
1. **Stop play.**
2. **Press the PROGRAM button so that PROGRAM is lit in the display.**
3. **Press the disc button you want to play, and enter 1 on the number keys.**
4. **Press the► SELECT button and then, after the disc has started to play, press the VIDEO INTRO button.**
5. **The Player starts to display in sequence the first five (5) seconds and track numbers of all tracks on the disc. Select the numbers you want to program. You can program nine (9) tracks.**
6. **Press the► SELECT button to play.**

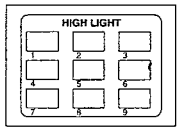
Viewing the highlights of a video CD

This function is used for a movie video CD.

Preparations
- When you play a video CD with the Playback Control function, the mode switch should be in the PBC OFF mode or KARAOKE mode.
- This function is controlled by the remote control unit.

Operation
1. **Start playing the track you want to see the highlights of.**
2. **After the track begins to play, press the HIGHLIGHT button on the remote control.**

(Remote control)



(Television screen)

3. **To select one of the nine (9) segments, press the number key (1 to 9) of the segment which you want to play.**

Notes
- When you choose a highlight it will start from five (5) seconds before the shown time below each segment.
- The highlights show the proceeding five (5) seconds up to the displayed time on each highlight.
- The segments are each of nine (9) equal-time divisions of the track.
- Nine (9) different highlights are displayed for one (1) minute.
- If no highlight is chosen in the one (1) minute period in NORMAL mode or PBC OFF mode, the next nine (9) segment highlights will begin. In KARAOKE mode highlights will stop.
- While in VIDEO INTRO or HIGHLIGHT, sometimes image is partially distorted. This symptom is caused by noise in the disc itself or incorrect manufacturing, not by a malfunction of the Player.

Selecting the SPATIALIZER mode

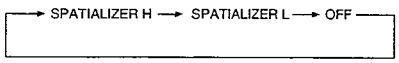
You can change the sound ambiance and enjoy a different sound using the Spatializer function.

Operation
1. **Choose one of the following two sound modes to change the sound ambiance.**

SPATIALIZER H : For movies and television programs
SPATIALIZER L : For music clips

2. **To select the Spatializer mode, push the SPATIALIZER button one or more times.**
When one of the Spatializer modes is selected, the SPATIALIZER indicator on the front panel is illuminated.

Each time you press the button, you toggle the mode as follows:



(Television screen)

3. **To cancel the effect, press the SPATIALIZER button until the word "OFF" appears on the television screen.**

Note
- This function does not work when playing a video CD recorded in monaural sound.
- This function is not effective if you attempt to use, at the same time, the similar function of a television, receiver or other device connected to this Video CD Player. Turn off the function on your television, receiver, or other device before selecting your Video CD Player's SPATIALIZER mode.

SPATIALIZER®
3-D STEREO
Certain audio features of this product manufactured under a license from Desper Products, Inc., Spatializer® and the circle-in-square device are trademarks owned by Desper Products, Inc.

Playback with the Bookmark function

Marking segments for later viewing with the Bookmark function

The Bookmark function lets you mark segments of a Video CD, so that you can have almost instant playback of desired scenes later. You can mark segments on up to ten discs, with a maximum of nine segments per disc.

Even if you take the disc out of the player, its bookmarks will stay stored for later use, until you erase them.

Operation

While playing the disc, press the BOOKMARK button at the segments you want to mark for later playing. Bookmark numbers appear on the television screen.

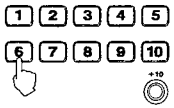
Notes

- The Bookmark function works only with Video CDs.
- The BOOKMARK function is most easily used when the Player is in PBC OFF mode.
- When you begin marking segments in any one of the three Player modes (KARAOKE, NORMAL or PBC OFF), all subsequent markings and searches for that disc must be done in the same mode.
- If you mark a segment when the Player is set for the Playback Control (PBC) function, the mark is placed at the beginning of the scene.

Using the BOOKMARK DIGEST button

1. **Press the BOOKMARK DIGEST button while playing the disc.**

2. **The marked segments will be highlighted on the screen, with their respective numbers (maximum of nine).**
3. **Press the Number key (1 to 9) which corresponds to the number of the segment where you want to start play.**



Note

- If you plan to use the BOOKMARK DIGEST function, register all bookmarks with the player in the same mode.
- The Bookmark Digest function is not available in PBC function.

Using the BOOKMARK SEARCH button

■ **With PBC off**

1. **Press the BOOKMARK SEARCH button while playing a disc. The BOOKMARK SEARCH light will flash on and off, indicating the Player is in the Bookmark Search mode.**

2. **Press the Number key (1 to 9) which corresponds to the number of the segment where you want to start play. Or press the ⏮ or ⏭ button until the desired bookmark number appears on the screen.**

Note

- To exit the Bookmark Search mode and return to regular viewing, press the BOOKMARK SEARCH button again.

■ **With PBC on**

1. **Press the BOOKMARK SEARCH button while playing a disc. The play will stop and the Player will enter Bookmark Search mode.**

2. **Press the Number key (1 to 9) which corresponds to the number of the segment where you want to start play.**

Note

- The Bookmark Search function ends automatically, and the player returns to regular viewing.

Canceling individual bookmarks

1. **If the Player is in PBC OFF mode, start playing the segment whose bookmark you want to cancel.**
2. **Press the CANCEL button. The bookmark for the segment immediately preceding the part you are playing will be canceled. (If the Player is in KARAOKE or NORMAL mode, the bookmark with the highest number will be canceled.)**

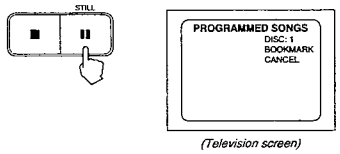
Note

- When you cancel a bookmark number, all subsequent bookmark numbers change, moving up one level to fill the gap you made.
- If the Player is in PBC ON mode, the last bookmark you registered will be canceled.

Canceling all bookmarks on individual discs

■ **When the disc whose bookmarks you want to cancel is in the Player:**
This cancels all bookmarks on the disc whose play you stopped.

1. **Stop play. Hold down the ⏸ STILL (PAUSE) button on the Player for at least three seconds.**

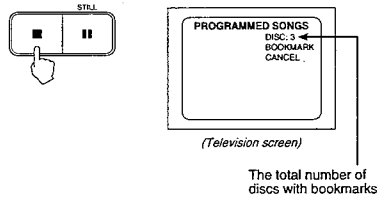


(Television screen)

2. **Keep holding down the ⏸ STILL (PAUSE) button until bookmark information on the television screen stops blinking.**

■ **When the disc whose bookmarks you want to cancel is not in the Player:**
This cancels all bookmarks on the disc which was played the least recently.

1. **Hold down the ■ STOP button on the Player for at least three seconds.**



(Television screen)

The total number of discs with bookmarks

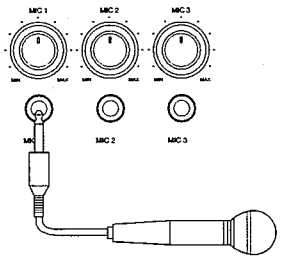
2. **Keep holding down the ■ STOP button until bookmark information on the television screen stops blinking.**

Using a microphone

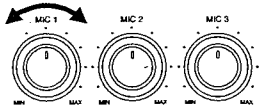
Using a wired microphone

Operation

1. **Insert the connector cable into the end of the microphone.**
2. **Press the cable sleeve against the microphone base and turn clockwise. Keep turning until sung.**
3. **Up to three (3) microphones can be connected to the MIC jacks on the front panel.**



4. **Switch the microphone power on.**
5. **Turn the MIC 1 through MIC 3 knobs clockwise (level up) or counterclockwise (level down) as desired.**



ATTENTION

When you are not using the microphone, set the MIC switch to OFF; otherwise the batteries will discharge even when not in use.

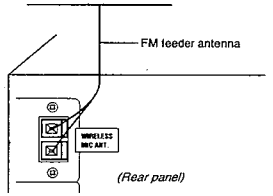
Using a wireless microphone (only for XL-MV55GD)

A wireless microphone can be used with the XL-MV55GD player only.

Antenna preparations

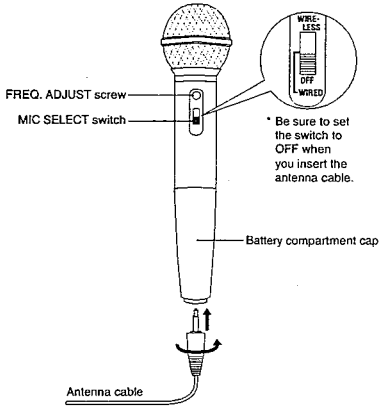
You need to connect the FM antenna to the back of the player.

- Open the FM antenna wire connectors by pushing them to the side, insert the FM antenna wires, and close the connectors by pushing them back into their original position.
- Attach the FM feeder antenna to the wall behind the player so that the wire forms a "T" as illustrated.



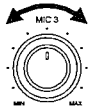
Microphone operation

1. **Insert the antenna cable into the end of the microphone as illustrated and turn it clockwise to secure it.**



2. **Press the WIRELESS MIC button on the front panel.**

3. **Set the MIC SELECT switch to "WIRELESS".**
4. **When the WIRELESS MIC button turns green, the wireless microphone has been accepted. If the tuning is not proper (noise or no voice output from the speaker because of interference from TV signals etc.), the button turns red.**
   You can use up to four (4) microphones (3 wired and 1 wireless) at the same time.
5. **The wireless microphone voice is mixed into MIC 3. Wireless microphone volume adjustment is performed with the MIC 3 knob.**



Note

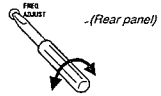
The maximum operating distance of the wireless microphone is about 10m. (This may change depending on room conditions.)

If there is interference when using the wireless microphone

If the WIRELESS MIC button turns green in spite of the microphone switch being off, or no voice is output from the speaker because of interference from TV signals etc., continue with the next step.

Operation

1. **Try to tune the microphone frequency. First, adjust the FREQ. ADJUST screw in the rear panel using the provided screwdriver, until the interference is gone.**



2. **Then set the MIC SELECT switch to "WIRELESS".**
3. **While speaking into the microphone continuously turn the microphone's FREQ. ADJ screw with the provided screwdriver until the WIRELESS MIC button on the front panel button turns green.**

Note

When you adjust the frequency, be sure to use the provided screwdriver. Metal head screwdrivers may not adjust correctly or may damage parts inside.

Using a wireless microphone as a wired microphone

When the batteries are dead or interference is too strong, you can use a wireless microphone as a wired microphone.

Operation

Insert the connector cable to the end of the microphone and set the MIC SELECT switch to "WIRED".

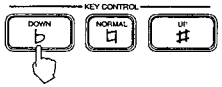
Note

- Normally, when not using the microphone as wireless, the WIRELESS MIC button on the front panel should be off.

Adjusting music key

Press the KEY CONTROL buttons (♭ or #) to change the key in which the music plays. To return the music to its original key, press the NORMAL button.

You can adjust the music using the remote control unit also.



Notes

- The degree the key has been sharpened or flattened is displayed on the television screen.
- When the song ends the key control will return to NORMAL mode automatically.

Adjusting echo effect

Turn the DIGITAL ECHO knob clockwise (level up) or counterclockwise (level down) to adjust the echo effect as desired.

Vocal replace

Preparation

This function is used for multiplex sound discs.

Operation

1. **While holding down the SHIFT button, press the MPX/V.REPLACE button during play or stop. REPLACE will appear on the display window and VO.REPLACE will appear on the television screen. When you start singing, the disc vocal is removed and your voice is inserted into the music.**

2. **To cancel voice replacement, hold down the SHIFT button and press the MPX/V.REPLACE button again.**

Note

- You cannot use the Vocal Replace function with a disc that has vocals recorded on the left channel.

Vocal masking

Preparation

Use a digital audio CD with vocals, in KARAOKE mode.

Operation

1. **While holding down the SHIFT button, press the SLOW/V.MASKING button during play or stop. The player plays the music with low level vocals recorded on the disc. MASKING will appear on the display window and VO.MASKING will appear on the television screen.**

2. **To cancel vocal masking, hold down the SHIFT button and press the SLOW/V.MASKING button again.**

ATTENTION

Be sure to remove the microphone

Note when connecting the sound output to the input of a TV or VCR: If an excessively strong signal is given to a unit through a microphone, for example when using Karaoke, it may cause an adverse effect such as distorted sound. Lower the sound volume using the microphone control.

Karaoke etiquette

Think of your neighbors when you are enjoying karaoke music. Particularly late at night, the sound you enjoy may reach your neighbors more than you expect. Common sense and courtesy are always appreciated.

Playing Video CDs with Playback Control function

This Player provides a Playback Control function which utilizes a procedure (menu selection) programmed in a video CD. The playback operation procedure may differ depending on the disc you use.

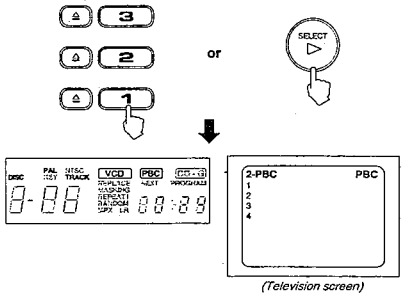
The Playback Control function is described below and in the figure.
- High-resolution still image display - Super-fine reproduction of still images with more than 4 times the resolution of video tape.
- Menu-driven playback - interactive menus for easy selection of tracks

Preparation
- A video CD with the Playback Control function is required for this operation.
- Only the NORMAL mode can be used.
- The buttons available for use are the number keys, the I◄◄/►►I PREV/NEXT buttons, ► SELECT button, DISC (1 through 3) buttons, and ↶ RETURN button.

Button functions

Number keys (Including +10 button)	Select a specific menu item from the television screen or monitor.
I◄◄/►►I PREV/NEXT buttons	Move through menu.
► SELECT button	Starts up a video CD with the PBC function in DISC tray(s) 1 to 3.
DISC (1 through 3) buttons	Start up a video CD with the PBC function in the specified DISC tray.
↶ RETURN button	Returns to the menu.

Operation
1. **Verify that the Player is in NORMAL mode.**
2. **Press the DISC (1 through 3) or ► SELECT button, and then the Player starts up the PBC function. "Pb" is shown in the Display window. The main menu, "PBC", and disc/track numbers are displayed on the television screen.**



3. **To move through the disc menus, press the I◄◄ ►►I PREV/NEXT buttons.**

4. **When the disc menu you want appears, select an item in the menu by using the number keys. The numbers on the number keys correspond to the menu item numbers.**
5. **To return to a menu and stop the track being played, press the ↶ RETURN button.**

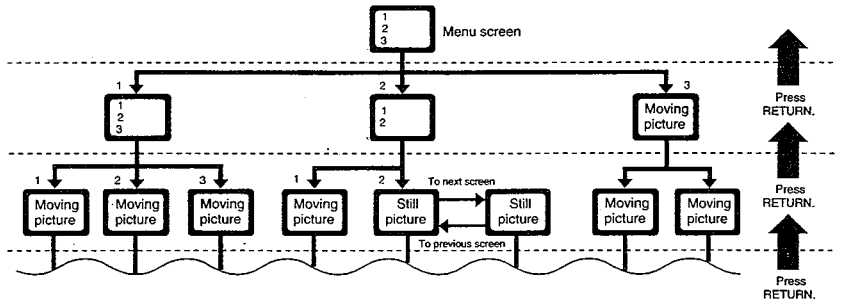
Notes
- Page numbers in the disk menu show that preceding pages exist. To move from the current menu, press the I◄◄/►►I PREV/NEXT buttons.
- If you have no desire to use the PBC function when playing a disc with the PBC function, switch the MODE switch to "PBC OFF" before playing.
- If you change the mode switch (except to NORMAL mode) when playing a Playback-Control disc, the play stops, so reset again from the beginning.
- If you press the number keys directly to select the track, you can't enter PBC mode.

Video CDs with Playback Control function

What is Playback Control function?
The Playback Control function, ushering in a new video CD age, allows you to enjoy menu-driven operation and high-resolution still images having a resolution four times greater than moving pictures.

- **Menu-driven playback**
  You can interact with the screen using a menu display to select and play an entry.
- **High-resolution still image display**
  You can display high-quality images four times clearer than moving pictures.

Example of playback using the Playback Control function



A selection menu is displayed when you start playing a video CD disc with the Playback Control feature. The selection menu shows a list of numbers for selection. Some discs may show moving pictures or a divided screen.

1. When a list of numbers is displayed, selecting a number shows its contents.
2. When a moving picture is displayed, pressing SELECT, at the time when the part of the movie you desire is shown, plays the movie.
3. When the selection menu is redisplayed after you have played your selection, selecting a number again replays its contents. (Some discs may show the menu screen several times.) When "Next" and "Prev" are shown, pressing "NEXT" or "PREV" can change the selection menu.
4. After playback, press RETURN to go back to the previous screen. After playback, pressing RETURN for 2 seconds or more causes it to go back to the previous menu selection. Some discs may return you to the menu screen shown before playback.

Note
- When a menu is displayed for a long time (about 10 minutes), the screen background automatically fades out to prevent screen burn-in while the setting is suspended.

RESTRICTING USE OF YOUR DISCS

Locking a disc with the Read-Protect function

Locking a disc

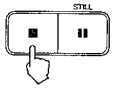
The Read-Protect function restricts viewing of a disc. Only people who know the code can unlock the disc. You can lock only Video CDs (up to a maximum of 10 discs).

Notes

- When you lock a disc using the Read-Protect function, your Player recognizes the number of tracks and the recorded time on that disc. If you try to play another disc which has exactly the same number of tracks and the same recorded time, the Player may mistakenly assume that it is the locked disc.
- You cannot lock a disc while it is playing, or when the VCD light is blinking (i.e., immediately after turning on the player or shutting a disc tray). Stop the disc, then lock it.
- All Read-Protect functions are performed using buttons on the Player, not on the remote control.

Operation

1. Play the disc for a moment, then press the Stop button.



2. Hold down the NEXT button on the Player for at least three seconds. The track and time numbers are no longer displayed.

3. Press the Number key "8" four times. The Display window indicates "Loc."

Now the disc cannot be viewed. You can open and close the tray and you can turn the Player power on and off, but no other functions are available for this locked disc.

Notes

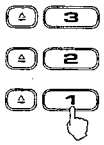
- PROTECT is displayed on the television screen.

Cut out the following instructions and keep them separately, to ensure privacy.

Canceling Read-Protect

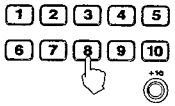
Operation

1. Place the disc in a tray, then press the Disc button for that tray. PROTECT is displayed on the television screen.



2. Hold down the PREV (Previous) button on the Player for more than three seconds. The indication "Loc" in the Display window will flicker for a moment.

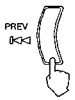
3. Press the Number key "8" four times. You can now play the disc.



Canceling Read-Protect for a single viewing

Operation

1. As above, hold down the PREV (Previous) button on the Player for at least three seconds. The indication "Loc" in the Display window will flicker for a moment.



2. Press the Number key "7" four times. You can now play the disc, but only until you press the OPEN/CLOSE button for that disc, or until you play another disc. (Turning off the Player power does not lock the disc again.) This function is convenient when you want to play a disc, but you also want to restrict its use later.

GRAPHIC/DIGITAL AUDIO CDs

Playing CD Graphics/ digital audio CDs

Playing CD Graphics

Basic video CD-playing procedures apply although the pictures are still. A CD Graphics is identified by "CD-G" shown on the display.

Notes

- The following operations may distort the image on the screen.
  - Searching for starting point of music
  - Fast forwarding/reversing
  - Stop/pause
- If paused, the screen changes to blue in a few minutes. This is to prevent burn-in of the TV screen.

Playing digital audio CDs

Basic video CD-playing procedures apply to the reproduction of sound.

Note

- The display has no indicator to show disc type.

SPECIFICATIONS

Main specifications

XL-MV33BK/XL-MV55GD

Model	Video CD player	
Playback disc	Video CD (with/without Playback Control function) CD Graphics Digital Audio CD	
Total harmonic distortion	0.01% (1kHz)	
S/N ratio	90 dB	
Frequency response	20Hz – 20kHz	
Input terminal	Microphone	2 mV (9.1 k)
Output terminal	Line output	2.0 Vrms (full scale)
	Image output Video (composite)	1.0 Vp-p (75)
Echoing	Digital echoing	
Power requirements	AC 115-127/220-240V~ adjustable with the voltage selector; 50/60Hz	
Power consumption	XL-MV33BK XL-MV55GD In standby mode	18 watts 19 watts 5 watts
Weight	XL-MV33BK XL-MV55GD	5.3 Kg (11.7 lbs) 5.4 Kg (11.9 lbs)
Dimensions (W/H/D)	XL-MV33BK XL-MV55GD	447 x 127 x 333.5 mm 17-5/8 x 5 x13-3/16 inches 447 x 127 x 339.3 mm 17-5/8 x 5 x13-3/8 inches

Accessories

- AC power cord 1
- Audio video cord 1
- Remote control unit (RM-SXMV55U) 1
  - Batteries (R6P(SUM-3)/AA(15F)) 2
- AC plug adaptor (except Hong Kong and China) 1
- Microphone (only XL-MV55 GD) 1
  - FREQ.ADJUST screwdriver 1
  - FM feeder antenna 1
  - Connector cable 1
  - Antenna cable 1
  - Batteries (R6P(SUM-3)/AA(15F)) 2

TROUBLESHOOTING

Troubleshooting

What appears to be a malfunction may not always be so. Please go through the following list before requesting service.

Symptom	Possible cause	Remedy
Power does not come on.	Power plug is disconnected from AC outlet.	Firmly connect the plug to AC outlet.
	Batteries are exhausted.	Replace the batteries with new ones.
Remote control does not work.	The tip of the remote controller is not pointed at the receiving part of the player.	Use the remote control correctly.
No image is displayed on the monitor.	The video cable is not connected.	Firmly connect the cable.
	The TV is not set in video mode.	Set the TV in video mode.
	An incompatible disc is loaded.	Load a disc compatible with the player.
Playback does not start.	No disc is loaded.	Load a disc.
	Disc is loaded upside down.	Reload the disc with the label up.
Speaker does not produce sound.	Audio cable is not connected.	Firmly connect the cable.
	Operation of the external amplifier is incorrect.	Operate the amplifier correctly.
Sound is distorted or noise is generated. Image is garbled.	Disc is dirty.	Wipe the disc surface with a soft cloth.
	Connection is wrong.	Correctly connect cables. (See page 2.)
Sound is intermittent. Image is garbled.	Disk is dirty.	Wipe the disc surface with a soft cloth. (See page 1.)
	Disc is scratched.	Replace the disc with a new one.
	Disc is warped.	
Disc tray does not come out when OPEN/CLOSE button is pressed.	Power plug is disconnected from the power outlet.	Firmly insert the plug into the outlet.
Operation is not possible.	Microcomputer malfunctions due to lightning or static electricity.	Turn the power off, then on again.

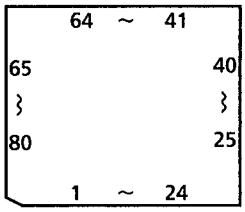
The malfunction may be caused by a device other than the player. Check other devices connected to the player.

—— MEMO ——

Description of Major ICs

■ HD6473726SD36F(IC201) : SYSTEM MICON

1.Pin Layout



KEY INPUT * Mark not used XL-MV33BK

LEFTSW INPUT (79PIN)	P.SW (24PIN)
SPATIALIZER (S931)	POWER (S936)
MPX (S932)	--
KEY UP (S933)	--
KEY NOR (S934)	--
KEY DOWN (S935)	--
* W.MIC (S938)	--

KEY matrix

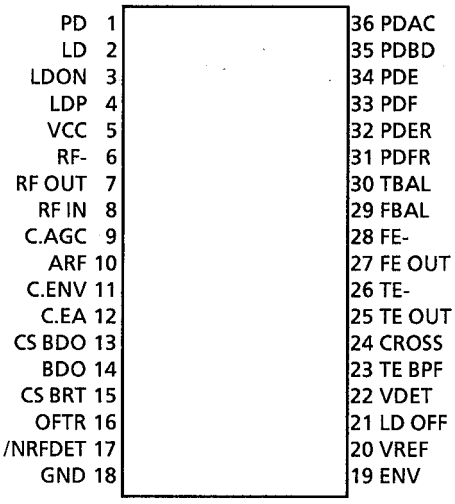
OUT \ IN	KEY IN1 (50PIN)	KEY IN2 (51PIN)	KEY IN3 (52PIN)	KEY IN4 (53PIN)
8G/KEYO 0 (48PIN)	VIDEO INTRO (S901)	BOOK DIGEST (S903)	STOP (S907)	PAUSE (S905)
7G/KEYO 1 (47PIN)	SHUTLLE SW (S930-①)	SHUTLLE SW (S930-②)	SHUTLLE SW (S930-③)	SHUTLLE SW (S930-④)
6G/KEYO 2 (46PIN)	9 (S910)	10 (S908)	PROGRAM (S904)	+10 (S906)
5G/KEYO 3 (45PIN)	5 (S918)	6 (S916)	7 (S914)	8 (S912)
4G/KEYO 4 (44PIN)	1 (S926)	2 (S924)	3 (S922)	4 (S920)
3G/KEYO 5 (43PIN)	RETURN (S909)	PREV (S911)	NEXT (S913)	PLAY (S915)
2G/KEYO 6 (42PIN)	DICK 3 (S925)	DICK 2 (S921)	DICK 3 (S917)	BOOK MARK (S940)
1G/KEYO 7 (41PIN)	DICK 3 ⏏ (S902)	DICK 2 ⏏ (S923)	DICK 3 ⏏ (S919)	B.SEARCH (S941)

2. Description

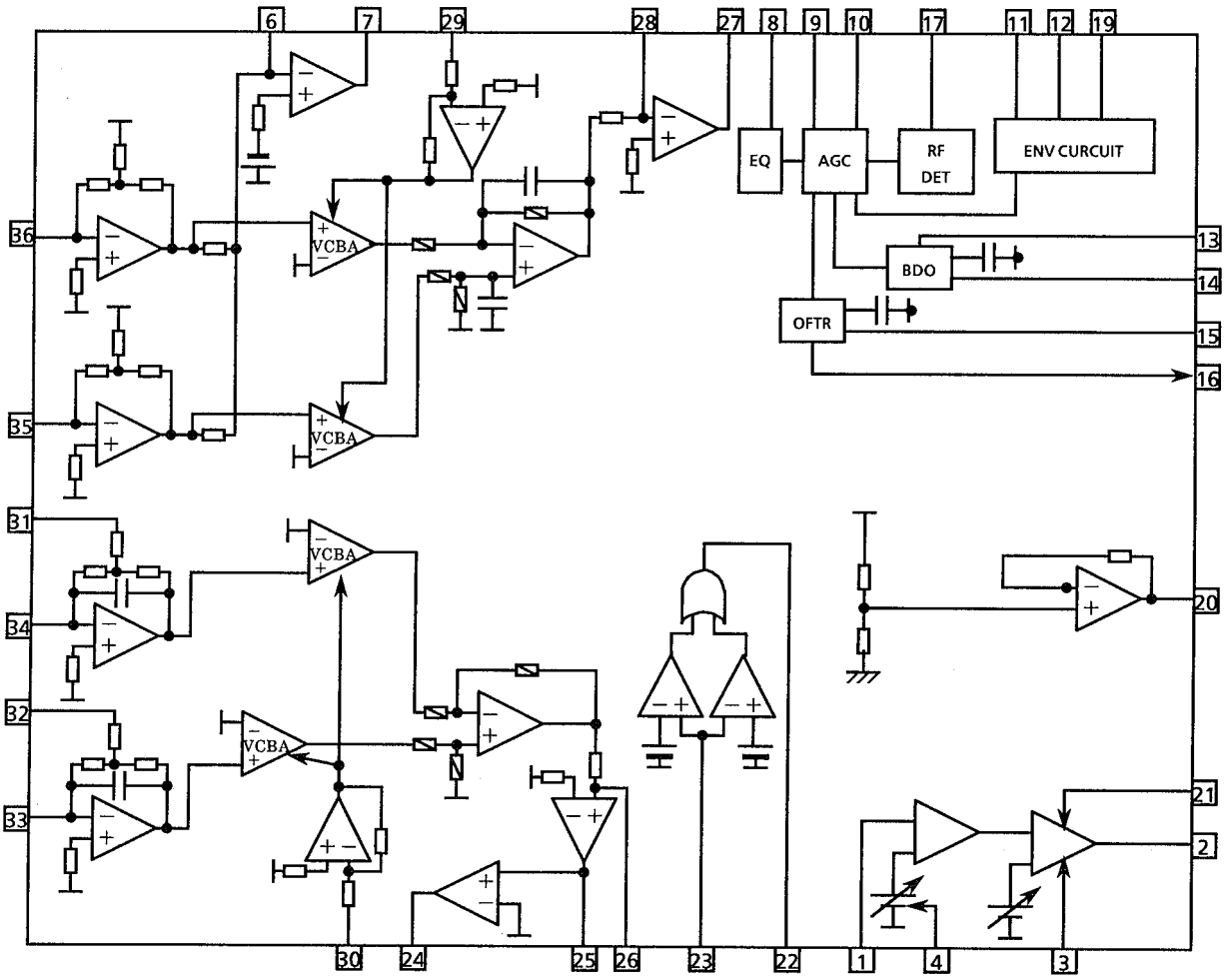
Pin No.	symbol	I/O	Description	Pin No.	symbol	I/O	Description
1	$\overline{\text{FLOCK}}$	I	Tracking lock signal input	40	-VDISP	--	FL−Power suplly
2	$\overline{\text{TLOCK}}$	I	Focus lock signal input	41~48	8G/KEYO0~1G/KEYO7	O	FL grid control output / Key matrix output
3	SENSE	I	Sense signal input	49	SPLV	O	SPATIALIZER level control output
4	TVSW	I	PALL NTSC select terminal	50~53	KEY IN1~4	I	Key matrix input
5	AVSS	--	Connected to ground	54	D1IND	O	DICK1 indication ON/OFF signal output
6	TEST	--	Connected to ground	55	D2IND	O	DICK2 indication ON/OFF signal output
7	X2	--	Not use	56	D3IND	O	DICK3 indication ON/OFF signal output
8	X1	I	(Pull up)	57	+5V	--	Power suplly (+5V)
9	GND	--	GND	58	$\overline{\text{POWER ON}}$	O	Power ON/OFF control output
10	OSC1	--	X'tal osillator connection	59	C3REQ	I	Command request signal to IC801
11	OSC2	--	X'tal osillator connection	60	C3DT	O	Command data signal output for IC801
12	$\overline{\text{RESET}}$	I	Reset signal input	61	C3CS	O	Chip select for IC801
13	HREQ	I	Communication signal input	62	C3CLK	O	Command clock signal output for IC801
14	$\overline{\text{RMIN}}$	I	Remote signal input	63	VCDRST	O	Reset signal output for IC106
15	IFL	O	μ-com I/F rach pauls output for IC301	64	OSDDT	O	Command data signal output for IC106
16	IFS	O	μ-com I/F data shift clock output IC301	65	OSDCS	O	Chip select for IC106
17	IFD	O	μ-com I/F data output for IC301	66	OSDCLK	O	Command clock signal output for IC106
18	$\overline{\text{LSIRST}}$	O	Reset signal output	67	SQCK	O	Out side clock terminal for Subcode Q resistor
19	$\overline{\text{P.INH}}$	I	INHBIT signal input	68	SUBQ	I	Subcode Q code input
20	HRDY	I	Communication signal input	69	MREQ	O	Data trancefer request signal output
21	CS	--	Chip select terminal (Pullup)	70	SRCLX	O	Command data signal output for IC106
22	REST	--	Pullup	71,72	M2HDT/H2MD	I/O	Serial data output
23	SOUNDIND	O	SOUND indication ON/OFF signal output	73	MLD	O	Command load signal output
24	$\overline{\text{P.SW}}$	I	POWER Key signal input	74	MDATA	O	Command data signal output
25	FMP.ON	O	FM POWER control output	75	MCLK	O	Command clock signal output
26	MARKIND	O	MARK indication ON/OFF signal output	76	+5V	--	Power suplly (+5V)
27	SERCHIND	O	SERCH indication ON/OFF signal output	77	MODESW	I	MODE select terminal
28	FMMUTE	O	FM MUTE control output	78	ECHOVOL	I	ECHOVOL control input
29	MUTE	--	Not use	79	LEFTSW	I	Control key signal input
30	SPON	O	SPATIALIZER ON/OFF control output	80	STAT	I	Status signal (IC401) input
31~39	S1~S9	O	FL segment control output				

■ AN8806SB (IC601) : RF & SERVO AMP

1. Terminal Layout



2. Block Diagram

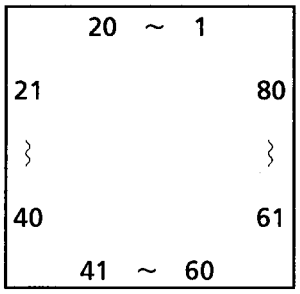


3. Functions

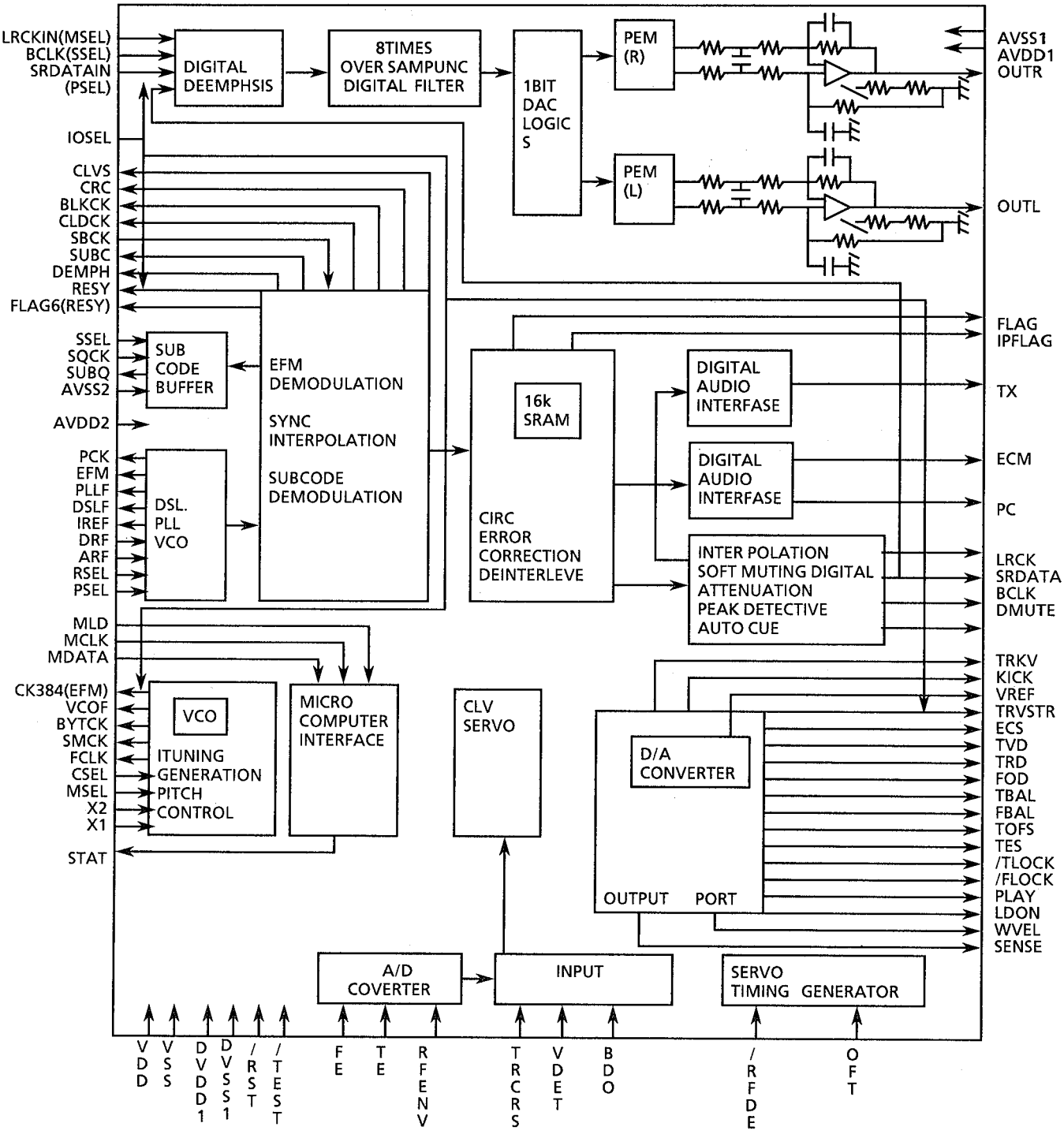
Pin No.	Symbol	I/O	Functions and operations
1	PD	I	APC amp input terminal
2	LD	O	APC amp output terminal
3	LD ON	I	APC ON/OFF control terminal
4	LDP	--	Connected to ground
5	VCC	--	Power supply
6	RF-	I	Inverse input pin for RF amp
7	RF OUT	O	RF amp output
8	RF IN	I	RF input
9	C.AGC	I/O	Connecting pin of AGC loop filter
10	ARF	O	RF output
11	C.ENV	I/O	A capacitor is connected to this terminal to detect the envelope of RF signal
12	C.EA	I/O	A capacitor is connected to this terminal to detect the envelope of RF signal
13	CS BDO	I/O	A capacitor is connected to detect the lower envelope of the RF signal
14	BDO	O	BDO output pin
15	CS BRT	I/O	A capacitor is connected to detect the lower envelope of the RF signal
16	OFTR	O	Of-track status signal output
17	/NRFDET	O	RF detection signal output
18	GND	--	Ground
19	ENV	O	Envelope output
20	VREF	O	Reference voltage output
21	LD OFF	--	Connect to ground
22	VDET	O	Vibration detection signal output
23	TE BPF	I	Input pin of tracking error through BPF
24	CROSS	O	Tracking error cross output
25	TE OUT	O	Tracking error signal output
26	TE-	I	Inverse input pin for tracking error amp
27	FE OUT	O	Output pin of focus error
28	FE-	I	Inverse input pin for focus error amp
29	FBAL	I	Focus balance control
30	TBAL	I	Tracking balance control
31	PDFR	I/O	F I-V amp gain control
32	PDER	I/O	E I-V amp gain control
33	PDF	I	I-V amp input
34	PDE	I	I-V amp input
35	PD BD	I	I-V amp input
36	PD AC	I	I-V amp input

■ MN662720RB (IC603) : DIGITAL SERVO & DIGITAL SIGNAL PROCESSER

1. Terminal Layout



2. Block Diagram

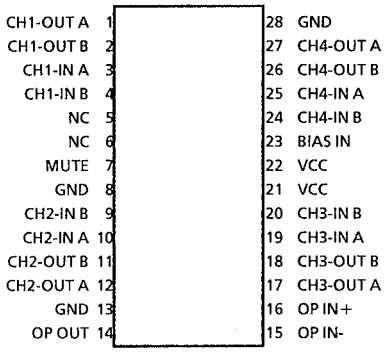


3. Description

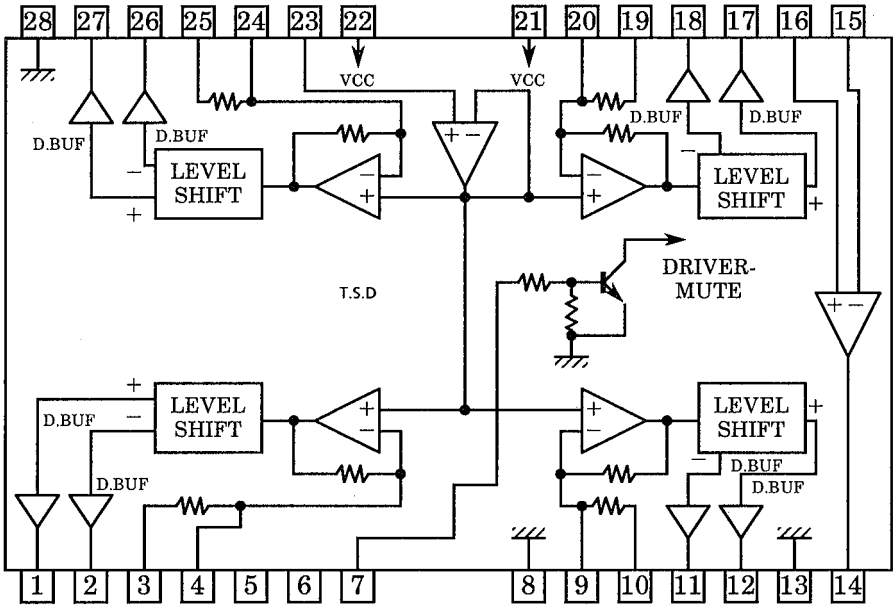
Pin No.	symbol	I/O	Description	Pin No.	symbol	I/O	Description
1	BCLK	O	Bit clock output pin for SRDATA	41	TES	—	Not used
2	LRCK	O	L/R distinction signal output	42	PLAY	—	〃
3	SRDATA	O	Serial data output	43	WVEL	—	〃
4	DVDD1	—	Power supply(Digital)	44	ARF	I	RF signal input
5	DVSS1	—	Connected to GND(Digital)	45	IREF	I	Reference current input pin
6	TX	O	Digital audio interface signal(Not use)	46	DRF	—	Not use
7	MCLK	I	μ-com command clock signal input (Data is latched at signal's rising point)	47	DSLF	I/O	Loop filter pin for DSL
8	MDATA	I	μ-com command data input	48	PLLF	I/O	Loop filter pin for PLL
9	MLD	I	μ-com command load signal input	49	VCOF	—	Not used
10	SENSE	O	Sense signal output (OFT,FESL,NACEND,NAJEND,POSAD,SFG)	50	AVDD2	—	Power supply (Analog)
11	/FLOCK	O	Lock signal for Focus L : pull	51	AVSS2	—	Connected to GND(Analog)
12	/TLOCK	O	Lock signal for Tracking L : pull	52	EFM	—	Not used
13	BLKCK	O	Subcode · block · clock signal output	53	PCK	—	〃
14	SQCK	I	Outside lock for sub-code Q resister input	54	PDO	—	〃
15	SUBQ	O	Sub-code Q-code output	55	SUBC	O	Subcode serial output data output
16	DMUTE	—	Connected to GND	56	SBCK	O	Clock input for subcode serial output
17	STATUS	O	Status signal (CRC,CUE,CLVS,TTSTOP,ECLV,SQOK)	57	VSS	—	Connected to GND(for X'tal cscillation circuit)
18	/RST	I	Reset signal input (L :Reset)	58	X1	I	Input of 16.9344MHz X'tal oscillation circuit
19	SMCK	—	Not used	59	X2	—	Not used
20	PMCK	—	Not used	60	VDD	—	Power supply(for X'tal cscillation circuit)
21	TRV	O	Traverse enforced output	61	BYTCK	—	Not used
22	TVD	O	Traverse drive output	62	/CLDCK	O	Subcode · Frame · Clock signal output
23	PC	—	Not used	63	FCLK	—	Not use
24	ECM	O	Spindle motor drive signal (Enforced mode output) 3-State	64	IPPLAG	O	Interpolation flag output H : Interpolation
25	ECS	O	Spindle motor drive signal (Servo error signal output)	65	FLAG	—	Not used
26	KICK	O	Kick pulse output	66	CLVS	—	Not used
27	TRD	O	Tracking drive output	67	CRC	—	〃
28	FOD	O	Focus drive output	68	DEMPH	O	De-emphasis ON signal (H : ON)
29	VREF	I	Reference voltage input pin for D/A output block(TVD,FOD,FBAL,TBAL)	69	RESY	—	Not used
30	FBAL	O	Focus Balance adjust signal output	70	IOSEL	—	onnected to GND
31	TBAL	O	Tracking Balance adjust signal output	71	/TEST	—	Pull up (+5V)
32	FE	I	Focus error signal input(Analog input)	72	AVDD1	—	Power supply (Digital)
33	TE	I	Tracking error signal input(Analog input)	73	NC2	—	Not used
34	RF ENV	I	RF envelope signal input(Analog input)	74	AVSS1	—	Connected to GND
35	VDET	I	Vibration detect signal input(H : detect)	75	NC3	—	Not used
36	OFT	I	Off track signal input(H : off track)	76	RSEL	—	Pull up(+5V)
37	TRCRS	I	Track cross signal input	77	CSEL	—	Pull down (GND)
38	/RFDET	I	RF detect signal input (L : detect)	78	PSEL	—	Pull down (GND)
39	BDO	I	BDO input pin (H : drop out)	79	MSEL	—	Pull down (GND)
40	LDON	O	Laser ON signal output (H : on)	80	SSEL	—	Pull up(+5V)

■ BA6897 (IC602) : BTL DRIVER

1. Terminal Layout



2. Block Diagram



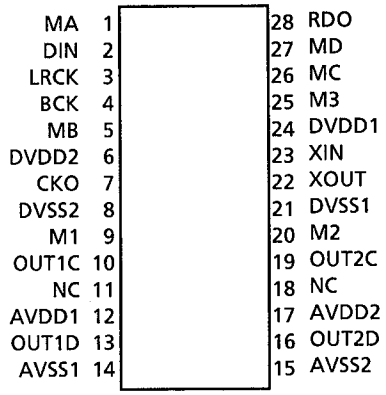
3.Description

Pin No.	Symbol	I/O	Description
1 2	CH1-OUT A CH1-OUT B	O	Focus drive output
4	CH1-IN A		Focus drive input
3 5,6 10 14 19 24	CH1-IN B NC CH2-IN A CH3-IN A CH4-IN B	—	Non connection
7	MUTE	I	Mute signal input pin
9 20	CH2-IN B CH3-IN B	I I	Spindle motor drive input Feed motor drive input
25	CH4-IN A	I	Tracking drive input

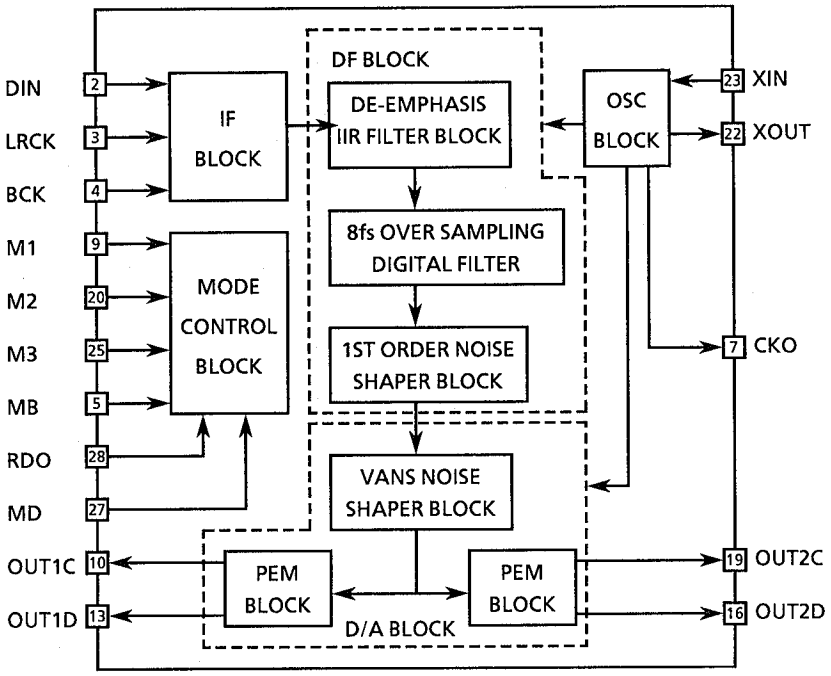
Pin No.	Symbol	I/O	Description
8,13,28	GND	—	GND
11 12	CH2-OUT B CH2-OUT A	O	Spindle motor drive output
15,16	OP IN	I	OP amp input
17 18	CH3-OUT A CH3-OUT B	O	Feed motor drive output
21,22	Vcc	—	Power supply
23	BIAS IN	I	Input pin of Bias
26 27	CH4-OUT B CH4-OUT A	O	Tracking drive output

■ MN35503 (IC501) : D / A CONVERTER

1. Terminal Layout



2. Block Diagram

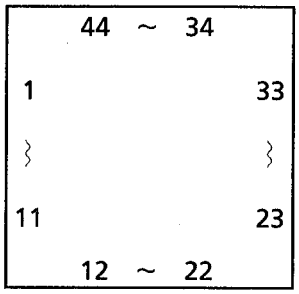


3.Description

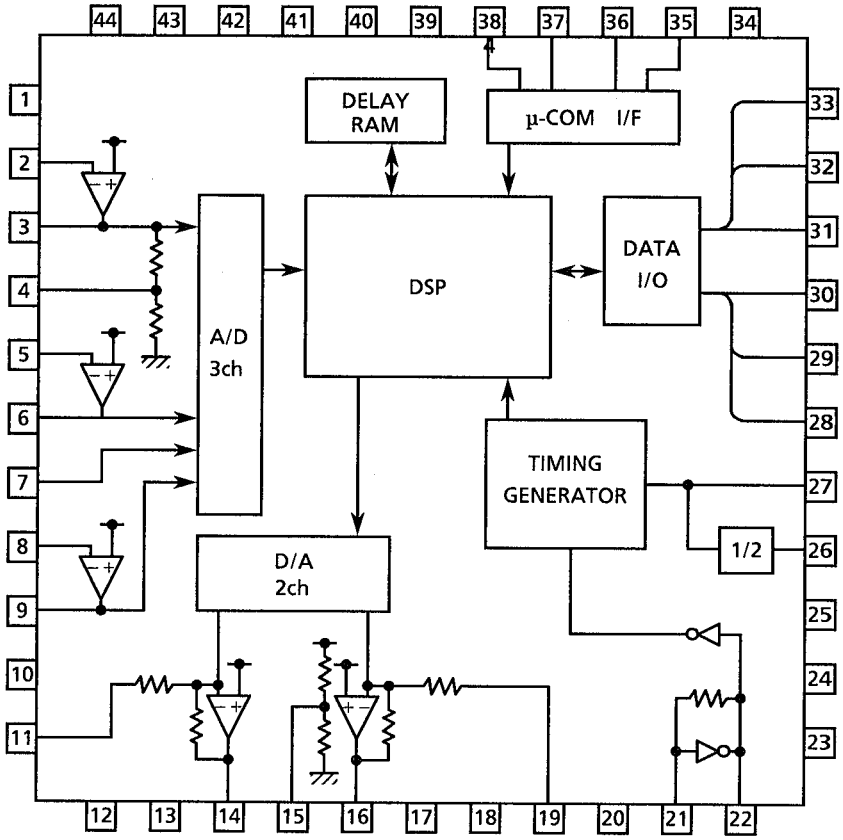
Pin No	Symbol	I/O	Description	Pin No	Symbol	I/O	Description
1	MA	--	Connected to ground	15	AVSS2	--	Analog ground 2
2	DIN	I	Data input	16	OUT2D	O	2D PEM output
3	LRCK	I	LR clock input	17	AVDD2	--	Analog power supply 2
4	BCK	I	Bit clock input	18	NC	--	Non connection
5	MB	I	De-emphasis ON signal	19	OUT2C	O	2C PEM output
6	DVDD2	--	Digital power supply 2	20	M2	--	Connected to ground
7	CKO	I	Clock output	21	DVSS1	--	Digital ground pin 1
8	DVSS2	--	Digital ground 2	22	XOUT	O	Crystal oscillator output
9	M1	--	Connected to ground	23	XIN	I	Crystal oscillator input
10	OUT1C	O	1C PEM output	24	DVDD1	--	Digital power supply 1
11	NC	--	Non connection	25	M3	--	Connected to ground
12	AVDD1	--	Analog power supply 1	26	MC	--	Connected to ground
13	OUT1D	O	1D PEM output	27	MD	I	Reset signal / Digital Att. control signal input
14	AVSS1	--	Analog ground 1	28	RDO	--	Not used

■ TC9409BF (IC301) : KARAOKE DSP

1. Terminal Layout



2. Block Diagram

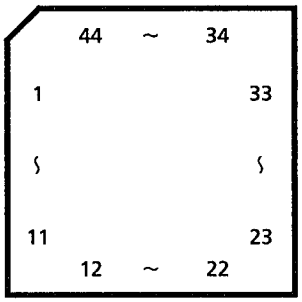


3. Pin Functions

Pin No.	Symbol	I/O	Description	Pin No.	Symbol	I/O	Description
1	VDA1	--	ADC power	23	GNDX	--	Ground for oscillator
2	MICI	I	LPF input for MIC in	24	VDD1	--	Digital power
3	LPFO1	O	LPF output for MIC in	25	CKS	I	Master clock select(H:256/384fs L:512/768fs)
4	VR1	--	ADC reference voltage	26	MCK2	O	Oscillator clock 1/2 diving output
5	AIL	I	LPF input for Lch line in	27	MCK1	O	Oscillator clock output
6	LPFO2	O	LPF output for Lch line in	28	SDO	O	Digital audio data output
7	VRA2	--	Reference power for ADC	29	BCKO	O	Bit clock output
8	AIR	I	LPF input for Rch line in	30	LRCKO	O	Channel clock output
9	LPFO3	O	LPF output for Rch line in	31	SDI	I	Digital audio data input
10	GNDA1	--	ADC ground	32	BCKI	I	Bit clock input
11	LI	I	Lch analog accumulated input	33	LRCKI	I	Channel clock input
12	LZ	O	Lch digital input zero detect	34	GNDD	--	Digital ground
13	GNDA2	--	DAC ground	35	RESET	I	Reset (L:reset)
14	AOL	O	DAC output Lch	36	IFD	I	µ-com I/F data input
15	VR2	--	DAC reference voltage	37	IFS	I	µ-com I/F data shift clock input
16	AOR	O	DAC output Rch	38	IFL	I	µ-com I/F rach pauls input
17	VDA2	--	DAC power	39	EMP	I	Di-emphasis setting (H:Di-emphasis filter on)
18	RZ	O	Rch digital input zero detect	40	EXTO	O	Expanding output terminal
19	RI	I	Rch analog accumulated input	41	TEST	I	Setting test mode (H;fix)
20	VDX	--	Power for oscillator	42	VDD2	--	Digital power
21	XI	I	Crystal oscillator	43	VDL	--	Digital power for DRAM
22	XO	O	Crystal oscillator	44	GNDL	--	Digital ground for DRAM

■ UPD65662GB-177(IC801) : Changer Controller

1. Terminal Layout



2. Pin Functions

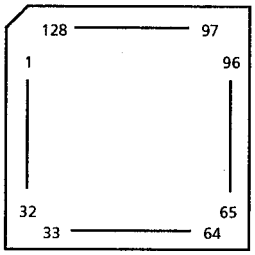
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	NC	--	Non connection	23	2SSW	I	TRAY2 switch input signal
2	NC	--	Non connection	24	1SSW	I	TRAY1 switch input signal
3	NC	--	Non connection	25	NC	--	Non connection
4	OS1I	I	Oscillation terminal	26	CAM0	I	Cam switch input signal for LCAM
5	OS1O	O	Oscillation terminal	27	CAM1	I	Cam switch input signal for LCAM
6	OS2I	I	Oscillation terminal	28	CAM2	I	Cam switch input signal for LCAM
7	OS2O	O	Oscillation terminal	29	CAM3	I	Cam switch input signal for LCAM
8	NC	--	Non connection	30	CAM4	I	Cam switch input signal for RCAM
9	C25IN	I	Connected to C25OUT	31	CAM5	I	Cam switch input signal for RCAM
10	C25OUT	O	Connected to C25IN	32	CAM6	I	Cam switch input signal for RCAM
11	RESET	I	Reset signal input	33	CAM7	I	Cam switch input signal for RCAM
12	REQ	O	Output the "mecha. data request"	34	FIT	O	Connected to C50
13	DATA	I/O	Control,Status data I/O	35	C50	I	Connected to FIT
14	ST	I	Strobe signal input	36	LMUP	O	L motor control signal
15	CKS	I	Clock input	37	LMDWN	O	L motor control signal
16	SELECT	--	Connected to GND	38	C25	--	Non connection
17	GND	--	GND	39	VDD	--	Power supply terminal
18	CK	--	Connected to GND	40	C100	--	Non connection
19	1MSW	I	TRAY1 switch input signal	41	RMUP	O	R motor control signal
20	2MSW	I	TRAY2 switch input signal	42	RMDWN	O	R motor control signal
21	3MSW	I	TRAY3 switch input signal	43	NC	--	Non connection
22	3SSW	I	TRAY3 switch input signal	44	NC	--	Non connection

■ CL480-F1 (IC101) : MPEG decoder

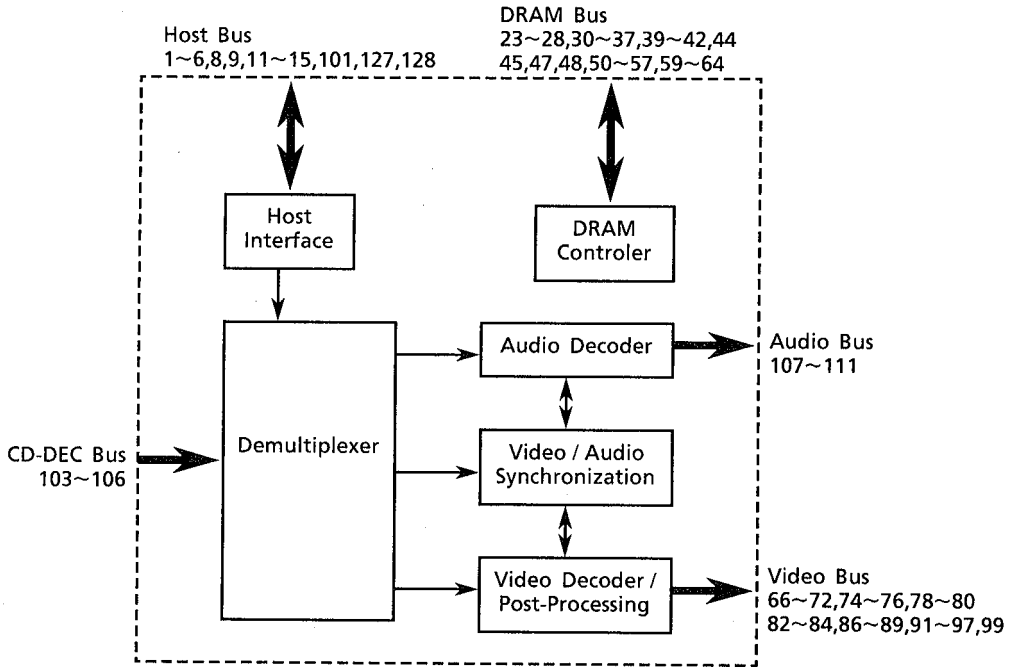
1. Functions

CL480 is MPEG-1 Audio / Video decoder

2. Terminal Layout



3. Block Diagram

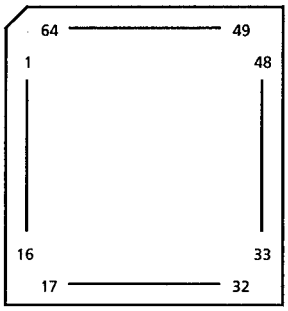


4. Terminal Discription

Pin No.	symbol	I/O	Function	Pin No.	symbol	I/O	Function
1	HA2	I	Host address terminal	78~80	VD10~ VD12	O	Video data terminal (G2~4/Y2~4)
2	DS	I	Data strobe terminal	81	IO VDD	--	Power suplly for Input /Output
3	W/R	I	I/O read terminal	82~84	VD13~ VD15	O	Video data terminal (G5~7 / Y5~7)
4	IRQ	O	Interact terminal	85	CKT VSS	--	Connected to GND
5	DTACK	O	Acknowledge data output	86~89	VD16~ VD19	O	Video data terminal (B0~B3)
6	HD0	I/O	Host data terminal	90	IO VSS	--	Ground terminal for Input /Output
7	IO VDD	--	Power suplly for Input /Output	91~94	VD20~ VD23	O	Video data terminal (B4~7)
8,9	HD1,2	I/O	Host data terminal	95	VSYNC	I/O	Vertical comparator / Composite comparator output
10	CKT VSS	--	Connected to GND	96	HSYNC	I/O	Horizontally synchronizing signal
11~15	HD3~HD7	I/O	Host data terminal	97	VOE	I	Video output enable signal
16	IO VSS	--	Ground terminal for Input /Output	98	VCO VDD	--	Power suplly of VCO
17	TEST	I	Test terminal	99	VCLK	I/O	Video clock terminal
18	XTL VSS	--	Oscillator grand terminal	100	VCO VSS	--	Ground of VCO
19	XTLIN	I	Oscillator input terminal	101	RESET	I	Reset signal input
20	XTLOUT	O	Oscillator output terminal	102	IO VSS	--	Ground terminal for input/output
21	XTL VDD	--	Power suplly for Oscillator	103	C2PO	I	Data error flag input
22	CKT VDD	--	Power suplly	104	CDLRCK	I	L / R word clock input
23~28	MD0~ MD5	I/O	DRAM data / ROM data terminal	105	CDDATA	I	Bit serial data input
29	IO VDD	--	Power suplly for Input /Output	106	CDBCK	I	Bit clock output
30,31	MD6,7	I/O	DRAM data / ROM data terminal	107	DALRCK	O	L / R clock output
32,33	MCE0,1	O	Chip enable output for ROM bank	108	DADATA	O	Bit serial PCM audio signal output
34~37	MD8~ MD11	I/O	DRAM data / ROM data terminal	109	DABCK	O	Bit clock output
38	IO VSS	--	Ground terminal for Input /Output	110	IO VDD	--	Power suplly for input/output
39~42	MD12~ MD15	I/O	DRAM data / ROM address terminal	111	XCK	I	Bit clock input terminal from outside
43	5V VDD	--	Power suplly (+5V)	112	CKT VDD	--	Power suplly
44	LCAS	O	DRAM LCAS/ROM address terminal	113	PIO12	O	Interact 2 signal output
45	LCASIN	I	DRAM LCAS input	114	PIO11	O	Non connection
46	CKT VSS	--	GND	115	PIO10	I	Host enable signal input
47	MWE	O	DRAM write enable signal output	116	PIO9	I	Boot rom enable signal input
48	UCAS	O	DRAM UCAS/ROM address terminal	117	PIO8	O	Non conection
49	IO VDD	--	Power suplly for input/output	118	PIO7	O	DAC emphasis signal output
50	UCAS IN		DRAM UCAS input terminal	119	PIO6	I	CD-DA emphasis signal input
51,52	RAS0,1	O	DRAM RAS0,1 terminal	120	PIO5	O	Non connection
53~57	MA9~ MA5	O	DRAM data / ROM address terminal	121	PIO4	O	FMV detect signal output
58	IO VSS	--	Ground terminal for Input /Output	122	PIO3	O	CD-DA Video CD select signal output Low : Video CD
59~63	MA4~ MA0	O	DRAM data / ROM address terminal	123	5V VDD	--	Power suplly (+5V)
64	PIO0	O	ROM address extention terminal	124	PIO2	O	Non conection
65	IO VDD	--	Power suplly for Input /Output	125	IO VSS	--	Ground for input/output
66~72	VD0~ VD6	O	Video data terminal (R0~6/CrCb0~6/YCrCb0~6)	126	PIO1	O	Non connection
73	IO VSS	--	Ground terminal for Input /Output	127	HA0	I	Host address input
74~76	VD7~VD9	O	Video data terminal (R7/CrCb7/YCrCb7)(G0,1/Y0,1)	128	HA1	I	Host address input
77	CKT VDD	--	Power suplly				

■MN171601AK8J2 (IC111) : Host Micon

1. Terminal Layout

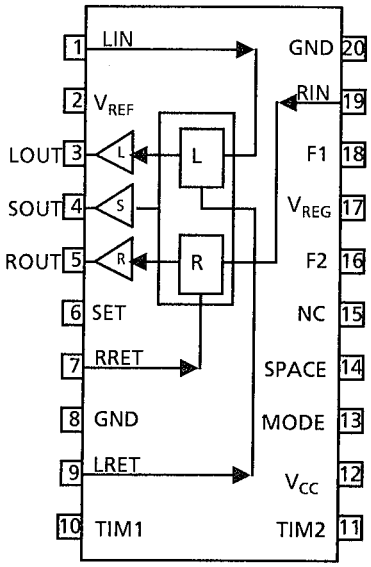


2. Terminal description

Pin No.	Symbol	I/O	Description	Pin No.	Symbol	I/O	Description
1	480 RST	O	Reset signal output	41~48	SD1~SD8	I/O	SRAM data input/output terminal
2	MREQ	I	Input the transfer request data signal	49	SR/W	O	Read / Write signal input/output
3	ACT INT	I	Interact 2 signal input	50	PAL60	O	PAL 60 on at NTB=high
4	G DET	I	CD-G detect terminal H : CD-G	51	RESET	I	Reset signal input
5	GND	--	GND	52	X1	--	Non connection
6	DTACK	I	Acknowledge signal input	53	X2	--	Non connection
7	GND	--	GND	54	VSS	--	Ground terminal
8	GND	--	GND	55	OSC2	--	Non connection
9	DIR		Input/Output signal control for IC114	56	OSC1	I	Clock input terminal
10	N/PAL	I	NTSC/PAL control signal output	57	VDD	--	Power suplly
11	RGB	O	Video out control signal (H : RGB, L : composite)	58	HREQ	O	Communication signal output
12	W/R	I/O	Read / Write signal input/output	59	SRCLK	I	Clock signal for data request to IC201
13~15	HA0~HA2	O	Address signall output for MPEG LSI	60	M2HDT	O	Serial data output
16	DS	O	Data strobe signal output	61	H2MDT	I	Serial data input
17~24	HD0~HD7	I/O	Data terminal for MPEG LSI	62	HRDY		Communication signal output
25~39	SA0~SA14	I/O	SRAM address signal output	63	VCD/G	O	Video switch switching signal output
40	SCS	O	SRAM	64	PALCDG	O	PAL CDG /NTSC clock signal terminal

■AN7395S-W (IC504) : SPATIALIZER 3-D STEREO IC

1. Terminal Layout

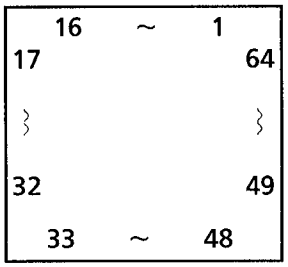


2. Terminal description

Pin No.	Symbol	I/O	Description	Pin No.	Symbol	I/O	Description
1	LIN	I	Lch signall input	11	TIM2	--	Detector 2
2	V_{REF}	--	1/2 V_{CC}	12	V_{CC}	--	Power suplly
3	LOUT	O	Lch effect signall output	13	SPACE	I	SPATIALIZER level control signal input
4	SOUT	--	Non connection	14	MODE	I	SPATIALIZER ON/OFF control
5	ROUT	O	Rch effect signall output	15	NC	--	Non connection
6	SET	--	Pull down	16	F2	I	Clock input terminal
7	RRET	I	Rch effect signall input	17	V_{REG}	O	Regulate voltage output
8	GND	--	GND	18	F1	O	Clock output terminal
9	LRET	I	Lch effect signall input	19	RIN	I	Rch signall input
10	TIM1	--	Detector 1	20	GND	--	GND

■ BU1417K (IC104) : Digital RGB-TV Encoder

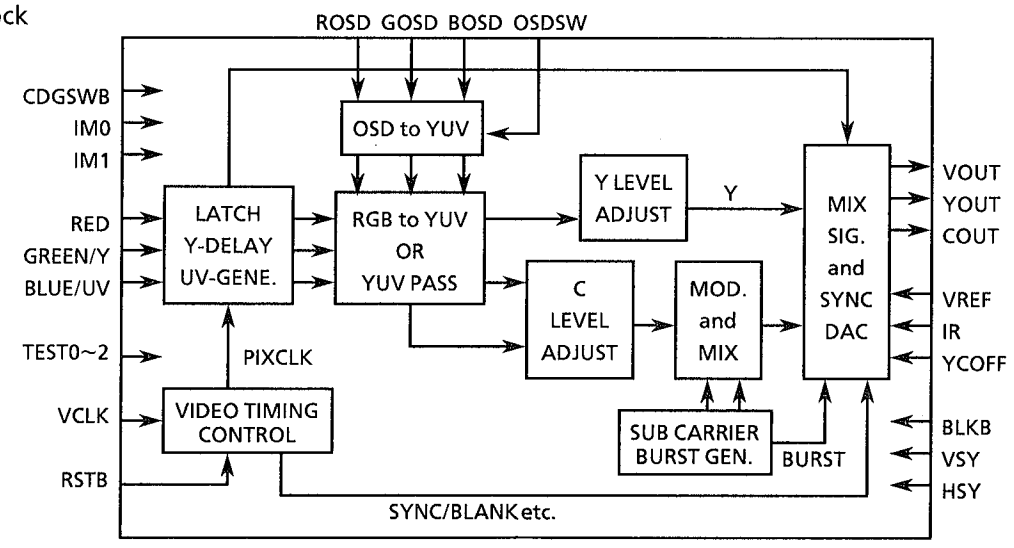
1. Terminal Layout



2. Pin function

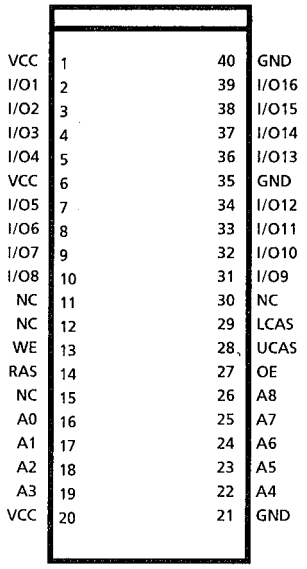
Pin No.	Symble	I/O	Function
1	BOSD	I	OSD Blue data input
2~8	GD0~GD6	I	Green/Y data bit0~bit6 input
9	GND	--	GND
10	GD7	I	Green / Y data bit7 input (MSB)
11~14	BD0~BD3	I	Blue / UV data bit0~bit3 input
15	OSDSW	I	OSD input enable (Input data H : ROSD, GOSD,BOSD color output)
16	CDGSWB	I	Select Videi-CD / CD-G Video-CD(H) ,CD-G(L)
17~20	BD4~BD7	I	Blue / UV data bit4~bit7 input
21	GND	--	GND
22	NC	I	Select NTSC/PAL L : NTSC, H : PAL
23,24	IM0,IM1	I	Not use
25,26	TEST1,2	I	Connected to GND
27	CVSY	I	C-sync input
28	HSY	I	H-Sync input
29	PIXCLK	O	1/2 Frequency of internal clock
30	BLKB	I	Data blanking enable L : output OK
31	VDD	--	Power suplly
32	INT	I	Select Interlace(H) / Non-interlace(L)
33	SLABEB	I	Set mode Master(H) / Slabe(L)
34	ADDH	I	ADD one_line at non-inter.
35	VREF	I	Reference Voltage (1.29V)
36	CGND	--	Chroma output GND
37	COUT	O	Chroma output for 'S' terminal
38	VGND	--	Composite output GND
39	VOUT	O	Composite output
40	AVSS	--	GND
41	NC	--	Non connection
42	IR	I	Reference resister (Set the output vertical for DAC)
43	AVDD	--	Power suplly
44	YGND	--	Luminance output GND
45	YOUT	O	Luminance output for 'S' terminal
46	G4FSC	--	Non connection
47	GCLK	--	Video clock input for VCD
48	YCOFF	--	onnected to GND
49	DVSS	--	GND
50	DVDD	--	Pal 60 on at NTB=high
51	VCLK	I	Video clock input for VCD
52	RSTB	I	Logic part initial reset
53	TEST0	--	Divide input CLK enable
54~56	RD0~RD2	I	Red data bit0~bit2
57	ROSD	I	OSD Red data input
58~60	RD3~RD5	I	Red data bit3~bit5
61	VDD	--	Digital VDD
62,63	RD6,RD7	I	Red data bit6~bit7
64	GOSD	I	OSD Green data input

3. Block



■ HM514260CJ-7X or UPD424260LE-70X (IC103) : 4Mbit ·Dynamic RAM

1.Terminal layout

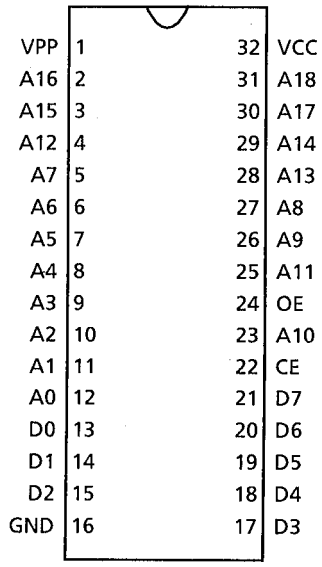


2. Pin Function

Pin No.	Synble	I/O	Function
1	VCC	--	Power suplly
2~5	I/O1~I/O4	I/O	Data input/output terminal
6	VCC	--	Power suplly
7~10	I/O5~I/O8	I/O	Data input/output terminal
11,12	NC	--	Non connection
13	WE	I	Write enable terminal
14	RAS	I	Low address strove terminal
15	NC	--	Non connection
16~19	A0~A3	I	Address input/output terminal
20	VCC	--	Non connection
21	GND	--	GND
22~26	A4~A8	I	Address input/output terminal
27	OE	I	Output Enable terminal
28	UCAS	I	Calm address strove terminal (upper)
29	LCAS	I	Colm address strove terminal (lower)
30	NC	--	Non conection
31~34	I/O9~I/O12	I/O	Data input/output terminal
35	GND	--	GND
36~39	I/O13~I/O16	I/O	Data input/output terminal
40	GND	--	GND

■ JCE8006-X (IC102) : 1Mbit ·ROM

1. PIn layout

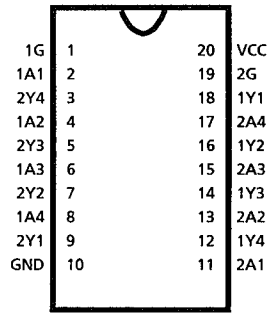


2. Pin function

Pin No.	Synble	I/O	Function
1	VPP	--	Power suplly
2~4,5~12	A16~A12,A7~A0	I	Address input terminal
13~15	D0~D2	I/O	Data input/output terminal
16	GND	--	GND
17~21	D3~D7	I/O	Data input/output terminal
22	CE	O	Output chip enable terminal
23	A10	I	Address input terminal
24	OE	I	Output enable terminal
25	A11	I	Address input/output terminal
26,27	A9,A8	I	Address input terminal
28,29	A13,A14	I	Address input terminal
30,31	A17,A18	I	Address input terminal
32	VCC	--	Power suplly

■ HD74HCT244PF(IC113) : Line Driver

1.Pin Layout

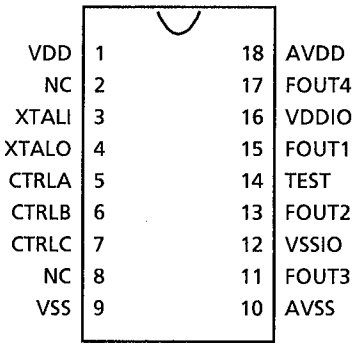


2. Truth table

1G or 2G	OPERATION
L	1A1~4 data to 1Y1~4 bus 2A1~4 data to 2Y1~4 bus
H	---

■ BU2173F (IC105) : VCO

1.Pin layout

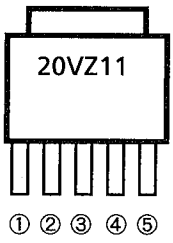


2. Terminal Function

Pin No.	Symbol	I/O	Function
1	VDD	--	Digital VDD
2	NC	--	Not use
3	XTALI	I	Input of X'tal oscillation circuit
4	XTALO	O	Output of X'tal oscillation circuit
5	CTRLA	I	Select of clock Video-CD / CD-G
6	CTRLB	I	Nomal mode = H
7	CTRLC	I	Select of clock CD-G PAL / NTSC
8	NC	--	Connected to GND
9	VSS	--	Digital GND
10	AVSS	--	Analog GND
11	FOUT3	--	Not use
12	VSSIO	--	Connected to GND
13	FOUT2	O	Clock output terminal 2
14	TEST	--	Connected to GND
15	FOUT1	O	Clock output terminal 1
16	VDDIO	--	Power suplly
17	FOUT4	O	Clock output terminal 4
18	AVDD	--	Analog VDD

■ PQ20VZ11(IC107) :Regulator

1.Pin layout

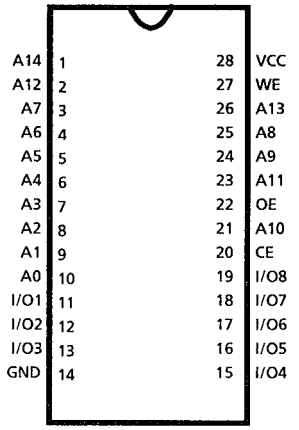


2. Terminal Function

Pin No.	Symble	I/O	FUnction
1	VIn	I	DC input
2	Vc	I	ON/OFF control
3	Vo	O	DC output
4	Vadj	I	Output voltage adjust
5	GND	--	GND

■ TC55257DFLL-85 E(IC112) : 256K Bit Static RAM

1.Pin layout

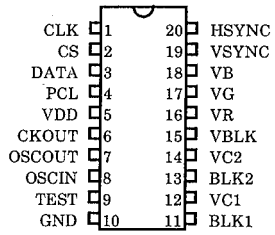


2. Terminal Function

Pin No.	Symble	I/O	Function
1~10	A14,12,7~0	I	Address input terminal
11~13	I/O1~I/O3	I/O	Data input/output terminal
14	GND	--	Connected to GND
15~19	I/O4~I/O8	I/O	Data input/output terminal
20	CE	I	Chip enable terminal
21	A10	I	Address input terminal
22	OE	I	Output enable terminal
23~26	A11,9,8,13	I	Address input terminal
7	WE	I	Write enable terminal
28	VCC	--	Power suplly

■ µPD6461GS-635(IC106): OSD

1.Pin layout

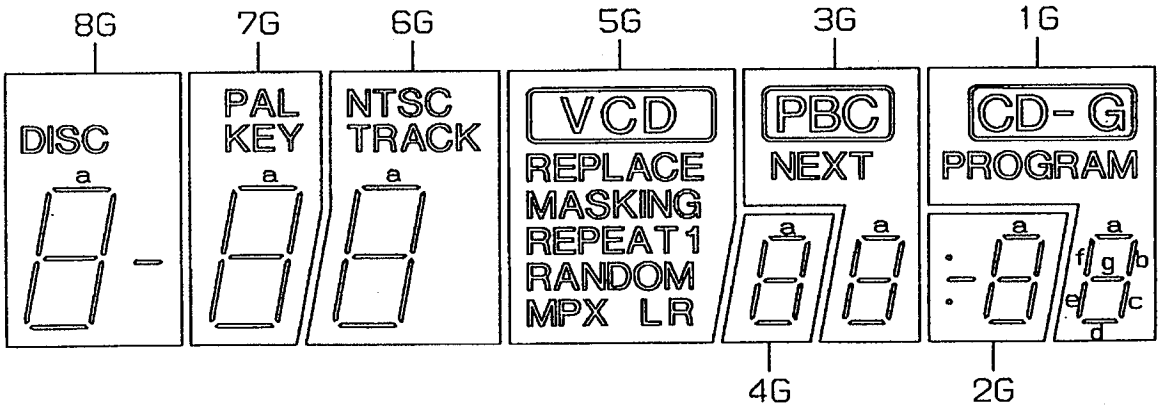


2. Description

Pin No.	symbol	I/O	Description	Pin No.	symbol	I/O	Description
1	CLK	I	Clock signal input	11	BLK1	O	Not used
2	CS	I	Able to transmit serial in L	12	VC1	O	Not used
3	DATA	I	Control data input	13	BLK2	O	Not used
4	PCL	I	Clear pin in power on	14	VC2	O	Not used
5	VDD	--	+5V	15	VBLK	O	Blanking signal output
6	CKOUT	O	Not used	16	VR	O	Character signal output
7	OSCOUT	O	Not used	17	VG	O	Character signal output
8	OSCIN	I	Dot Clock signal input	18	VB	O	Character signal output
9	TEST	--	GND	19	VSYNC	I	Vertical syncro signal input
10	GND	--	GND	20	HSYNC	I	Horizontal syncro signal input

Internal Connection of Display

■ DI901: ELU0001-212



ANODE CONNECTION

	8G	7G	6G	5G	4G	3G	2G	1G
P1	DISC	PAL	NTSC	VCD	-	PBC	:	CD-G
P2	-	KEY	TRACK	REPLACE	-	NEXT	-	PROGRAM
P3	a	a	a	MASKING	a	a	a	a
P4	b	b	b	REPEAT	b	b	b	b
P5	f	f	f	1	f	f	f	f
P6	g	g	g	RANDOM	g	g	g	g
P7	c	c	c	MPX	c	c	c	c
P8	e	e	e	L	e	e	e	e
P9	d	d	d	R	d	d	d	d

PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
CONNECTION	F1	F1	NP	NP	8G	7G	6G	5G	4G	3G	2G	1G	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	9P	8P	7P	6P	5P	4P	3P	2P	1P	NP	NP	F2	F2

NOTE 1) F1,F2 --- Filament
2) NP ------ No pin
3) NC ------ No connection
4) DL ------ Datum Line
5) 1G~8G --- Grid

Disassembly Procedures

(1) Top cover removal
1. Remove 2 screws Ⓐon the rear side and 4 screws Ⓑ on both sides of the cover.
2. Remove the cover.

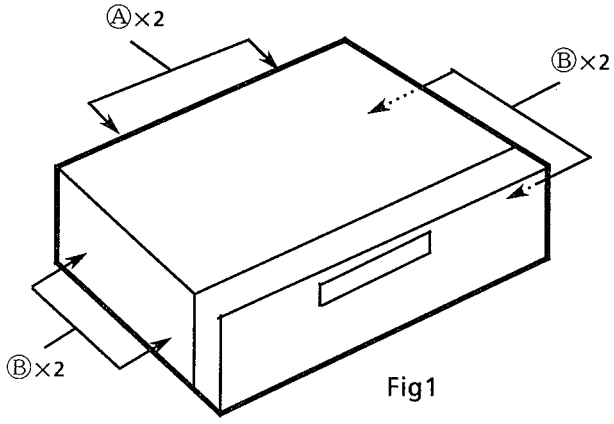


Fig1

(2) Rear panel removal
1. Remove the top cover.
2. Remove the 6 screws Ⓒ and 2 screws Ⓓ.
(Remove the 3 screws Ⓒ' only XL-MV55GD)
3. Remove the rear panel.

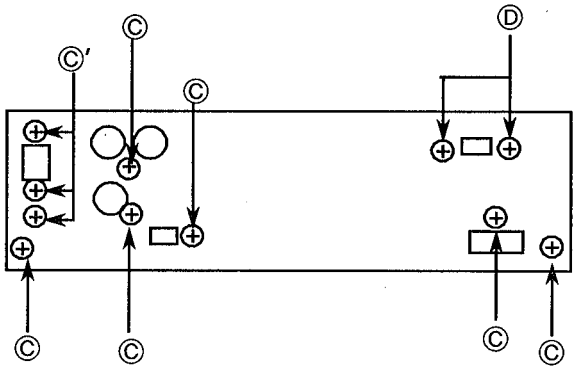


Fig2 Rear view

(3) Front panel assembly removal
1. Remove the top cover.
2. Disconnect the CN201,CN202 and CN203.
Remove the screw Ⓕ fixing the wire on the CD changer mecha ass'y.(FIG4)
3. Remove the 3screws Ⓔ on the bottom of the front panel.
4. Release the hooks Ⓧ holding the front panel , and remove the front panel assembly.

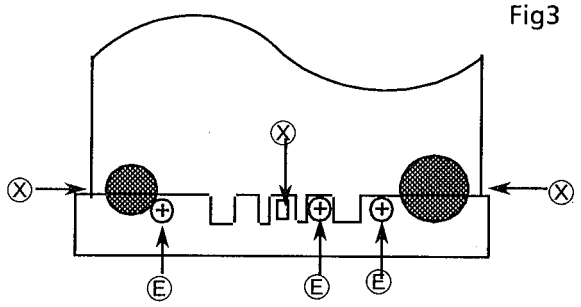


Fig3

(4) CD changer mecha ass'y removal
1. Remove the top cover.
2. Remove the front panel ass'y.
3. Disconnect the CN211,CN214 and CN213.
4. Remove the 4screws Ⓨ.
5. Remove it.

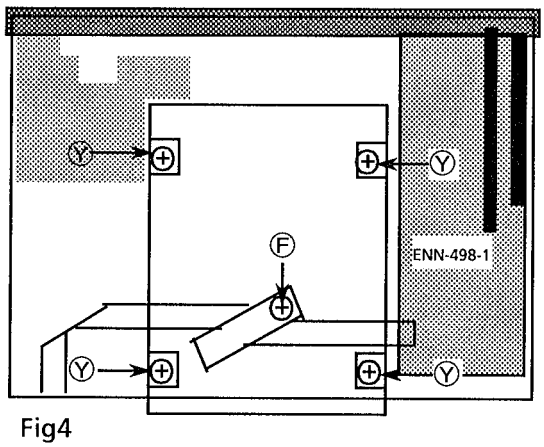


Fig4

(5) CD Main PCB(ENN-498-1) with same PCB removal
1. Remove the top cover,front panel assembly and rear panel.
2. Disconnect the connector CN101,CN211,CN213 and CN214.
3. Remove the 3screws Ⓙ.
4. Remove the CD Main PCB(ENN-498-1).

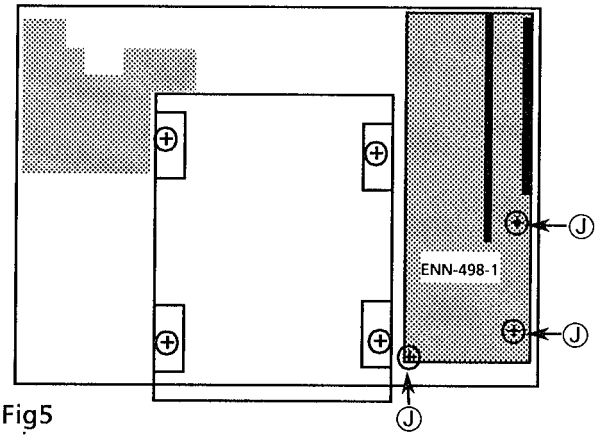
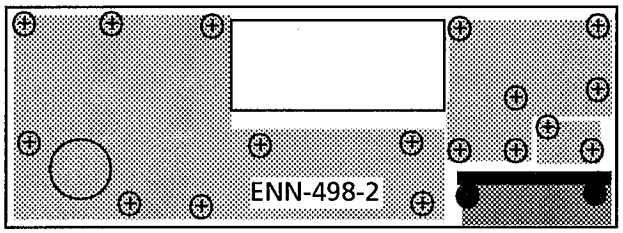


Fig5

(6) Front PCB(ENN-498-2~5) removal
1. Remove the top cover.
2. Remove the Front panel ass'y.
3. Remove the 3 MIC knobs and a ECHO knob.
4. Remove the 19 screws Ⓛ and Ⓖ.
5. Remove the Front PCB.



⊕(Ⓛ×17)
●(Ⓖ×2)
Fig6

(7) MARK & SERCH PCB(ENN-498-6) removal
1. Remove the top cover.
2. Remove the Front panel ass'y.
3. Remove the key input PCB(ENN498-2).
4. Remove the shutlle knob ass'y.
5. Remove the 2 screws Ⓛ fixing the mark & serch PCB(ENN-498-6).Remove it.

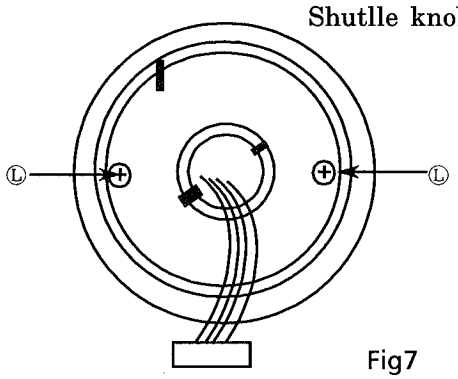


Fig7

(8) VIDEO CD PCB(ENV-004) removal
1. Remove the top cover .
2. Remove the 4 fastener fixing the video CD PCB.
3. Remove it.

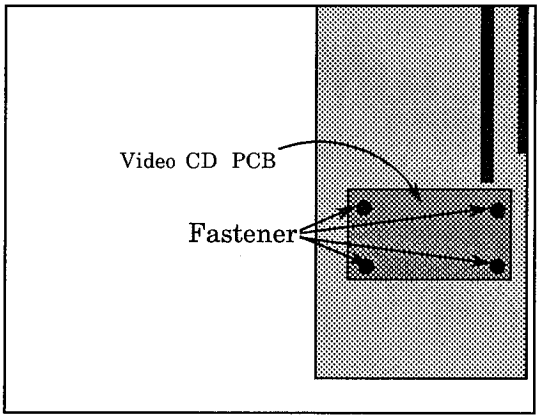


Fig8

(9) KARAOKE & DAC PCB(ENN-499-1) removal
1. Remove the top cover and rear panel .
2. Disconect the connector the CN221,CN223 and CN551.
3. Remove it.

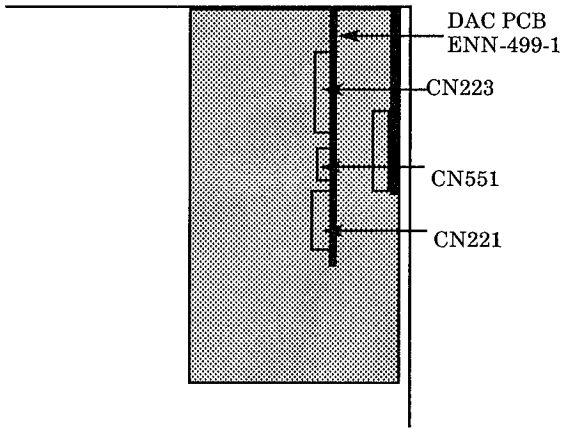


Fig9

(10) Wireless mic tuner PCB(ENN-499-4) removal
(Only used XL-MV55GD)
1. Remove the top cover and rear panel.
2. Disconnect the connector the CN401.
3. Remove it.

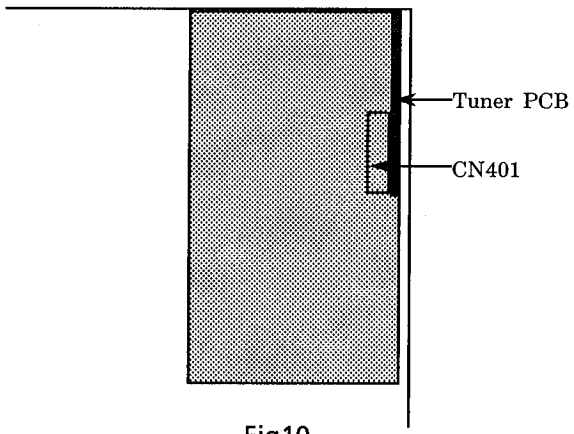


Fig10

CD Changer mech. Ass'y removal

(12) CD Tray assembly removal

1. Disassemble the changer mech..
2. Remove the rod from both ends' hooks which are secured on T.Bracket ⓐ and clamper baseⓑ. [See Fig. 12)
3. Remove 3 screwsⓁ securing T.Bracket.(See Fig. 14)
4. Remove a screw Ⓝsecuring center of the clamper ass'y. (See Fig. 13)
5. Remove the clamper ass'y from ★ screw fixing side.
6. Remove a screw Ⓛwhich secures the return spring and lock levers from the chassis ass'y.(See Fig. 15.)
7. Remove 2 pallsⓓ which slightly secure the return spring to remove it.
8. Remove 3 lock levers.
9. Check that the lifter unit stopper is inserted into hole ⓔ located on CD tray ass'y. (See Fig. 16.)
10. Check that the driver unit elevator is seen from a hole (marked ⑤) on left side of the CD changer mech..(See Fig. 17 and 18.)
    [NOTE] Set the elevator in correct position (Fig. 18) by rotating the pulley gear with finger if it is not positioned correctly (Fig. 19.).
11. Rotate the motor pulley clockwise with finger until the lifter unit's stopper is lowered from ⓒhole located on the CD tray ass'y. (See Fig. 19.)
12. And, pull all 3 CD tray assemblies forward until they stop. (See Fig. 17.)
13. Press 2 pawls (f, f') located rear side of the CD tray ass'y according to an arrowⓗ to remove the CD tray ass'y. (See Fig. 20.)
    At first, removing the lowest tray is easier.

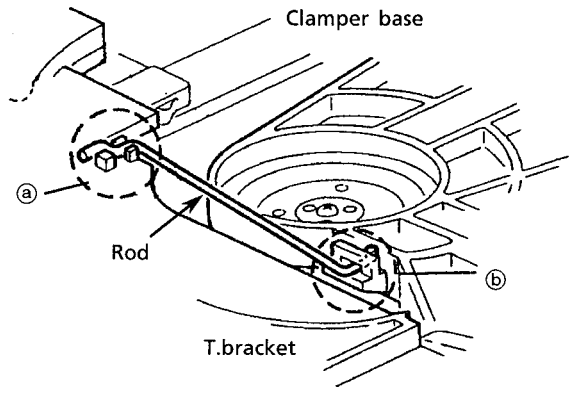


Fig. 12

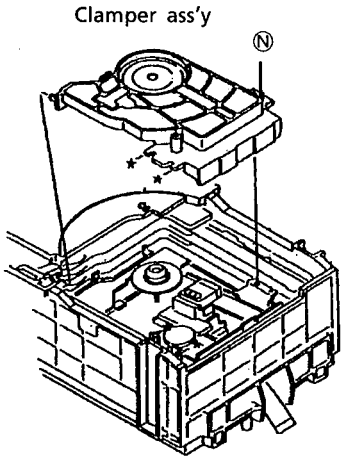


Fig.13

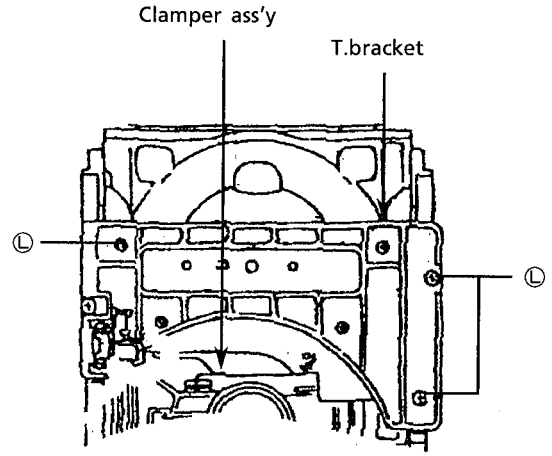


Fig.14

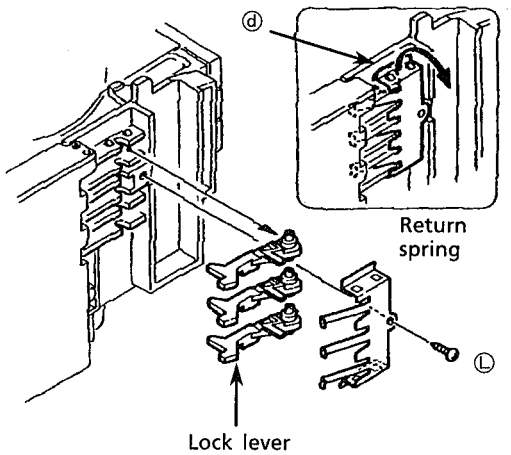


Fig.15

Ⓛ .. SBSF2608Z Ⓝ ... SPST2606Z

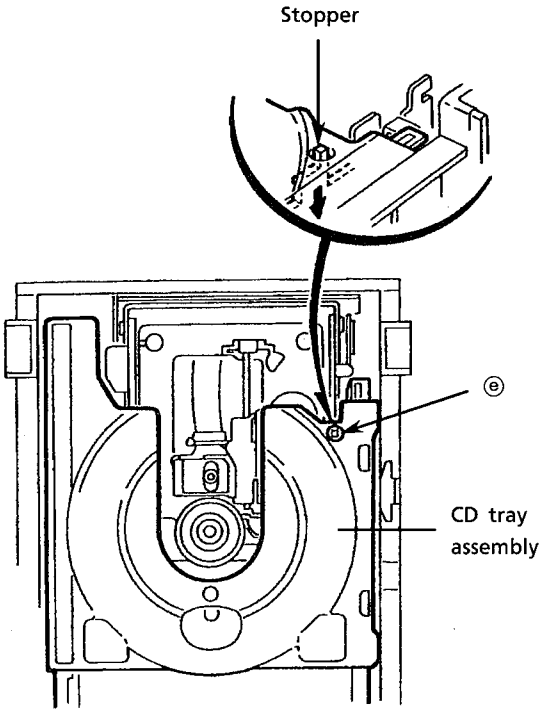


Fig. 16

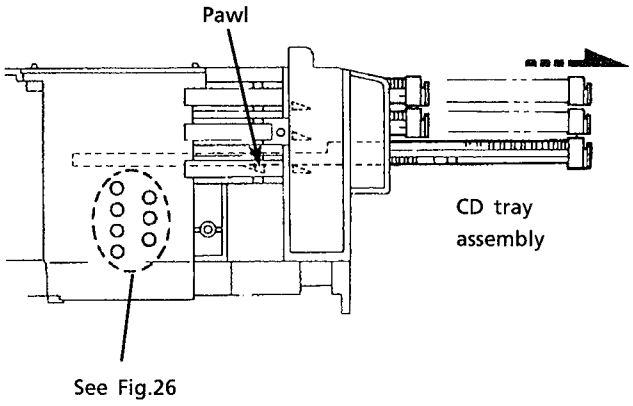


Fig. 17

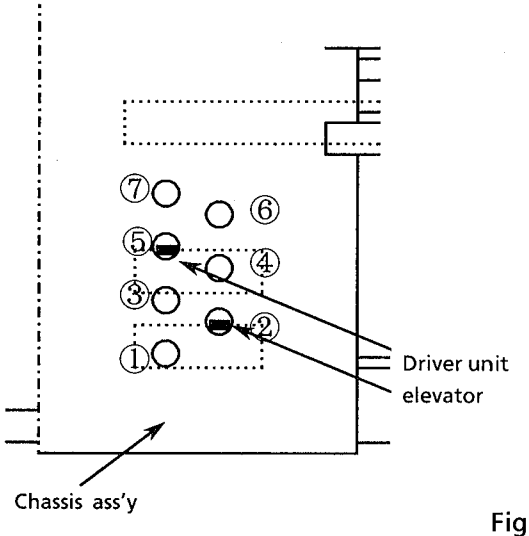


Fig. 18

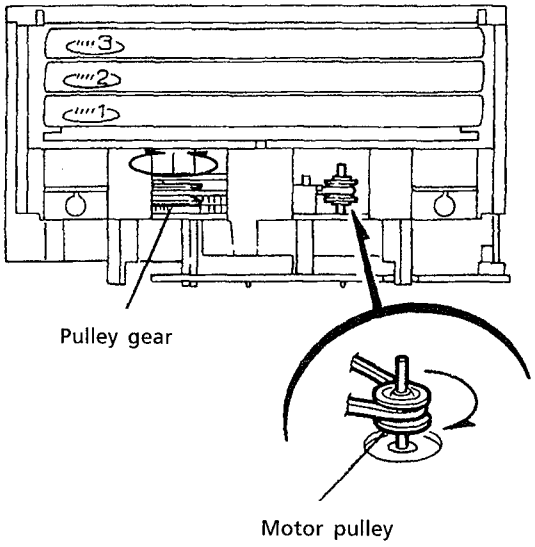


Fig. 19

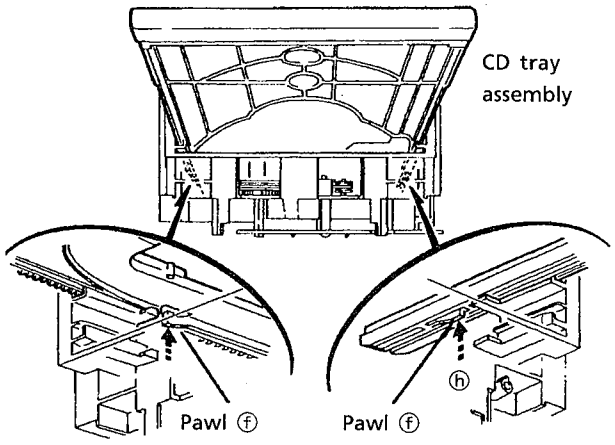


Fig. 20

Ⓛ .. SBSF2608Z

(13) CD mechanism removal

1. Remove the CD tray ass,y .
2. Rotate the Cam R1, R2 ass'y counterclockwise so that CD mech. ass'y's shaft ⓗ is positioned as shown in Fig. 21.
3. Remove 4 screws Ⓛ securing CD mech. ass'y. (See Fig. 21.)

*How to replace pick-up unit

1. If CD mech. is removed without disassembling CD mech. ass'y, rotate the Cam R1, R2 ass'y clockwise to set the CD mech. ass'y's shaft(L) as shown in Fig. 22.
2. Lift the CD mech. ass'y toward the direction ⓘ to remove it from the lifter unit. (See Fig. 23.)

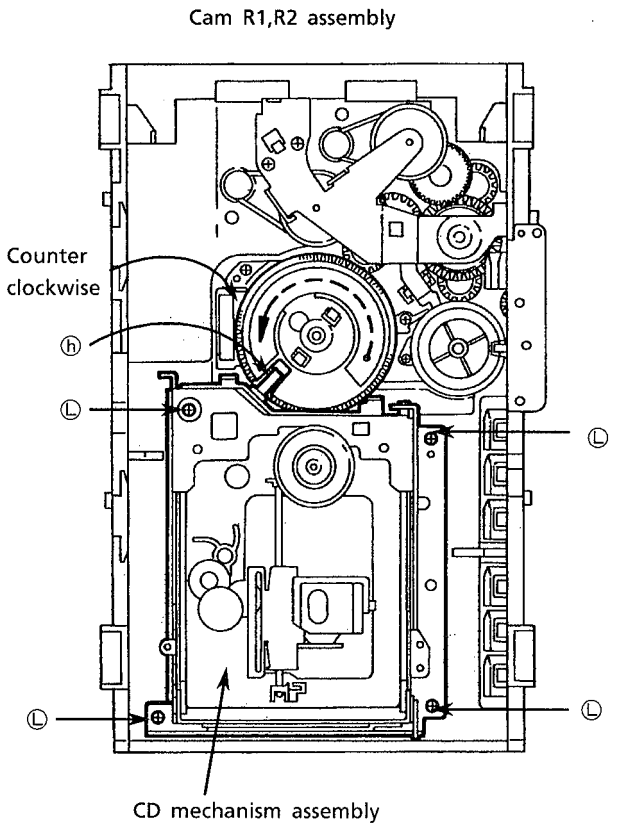


Fig. 21

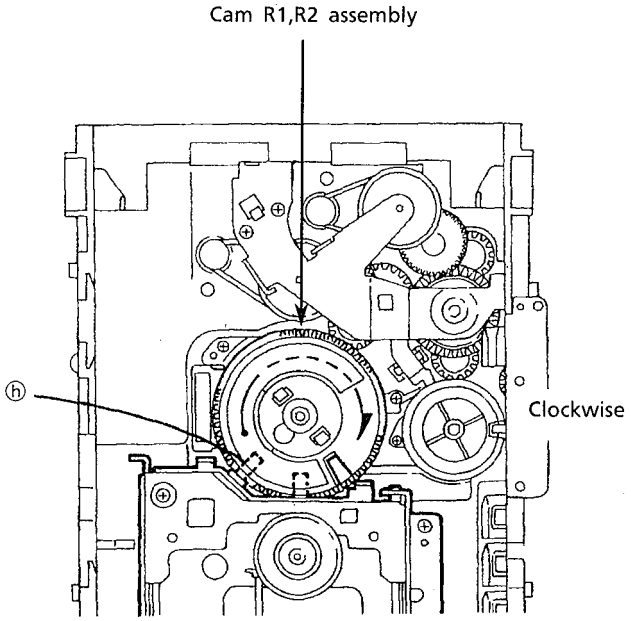


Fig. 22

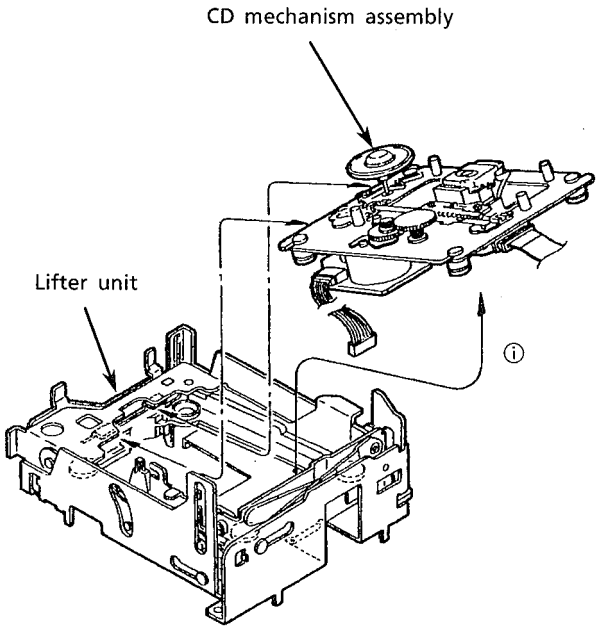


Fig. 23

Ⓛ .. SBSF2608Z

(14) Actuator motor board removal

1. Unsolder 4 soldered point ⓙ for both motors. (See Fig. 24.)
2. Remove a screw Ⓗ securing the CD servo board. (See Fig. 24.)
3. Press the hook and release it to remove the CD servo board.
4. Remove 2 screws Ⓕsecuring the actuator motor board. (See Fig. 24.)
5. Remove 2 screws Ⓛsecuring the tray select switch board. (See Fig. 25.)

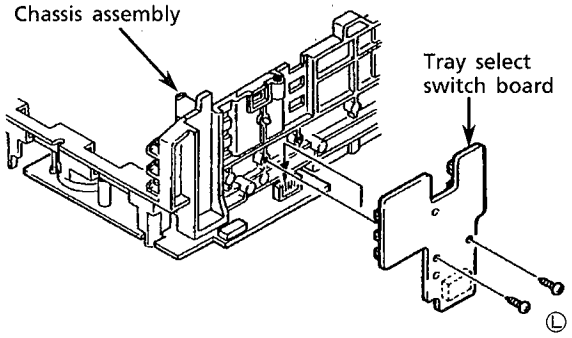


Fig. 25

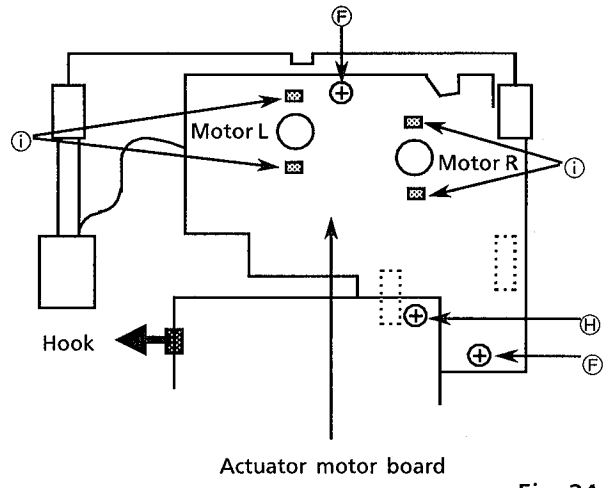


Fig. 24

(15) Cam unit removal

1. Disassemble CD mech. ass'y.
2. Rotate the Cam gear L so that the drive unit's pole ⓚ is positioned as shown in Fig. 26.
3. Remove the drive unit and cylinder gear. (See Fig.27.)
4. Rotate the Cam gear L so that the select gear's ⓘ is positioned as shown in Fig.28.
5. Remove 4 screws Ⓕ securing the cam unit which includes the cam gear L and Cam R1, R2 ass'y. (See Fig 28.)

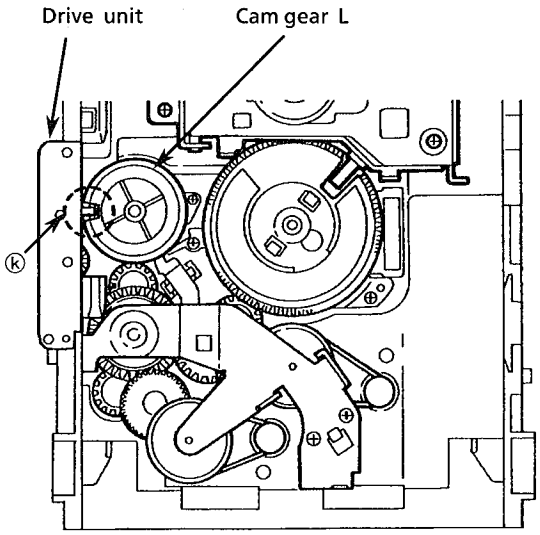


Fig. 26

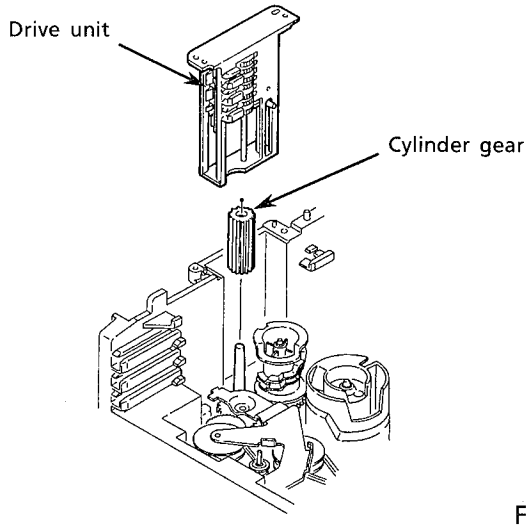


Fig. 27

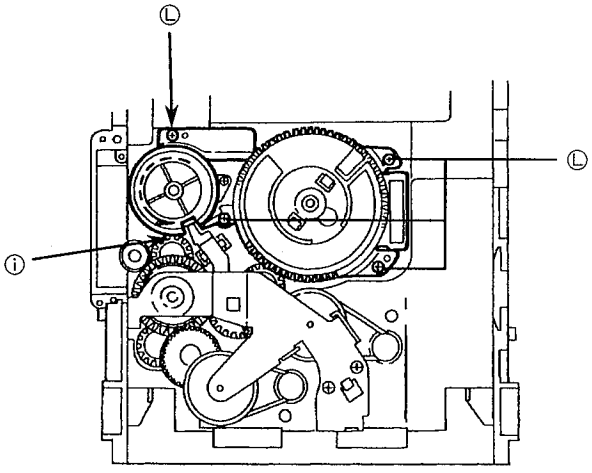


Fig. 28

Ⓕ .. SBSF2608Z Ⓗ ... SBSF3008Z

(16) Removal for actuator motor and belt

1. Remove 2 screws Ⓟ securing the gear bracket. (See Fig. 29.)
2. Press the pawl Ⓜ securing the gear bracket to the arrow in the figure to remove the gear bracket. (See Fig. 29.)
3. Remove the gear bracket from the chassis ass'y's ⓝ securing top of the gear bracket. (See Fig. 30.)
4. Remove each belts from the both actuator motor pulleys and the pulley gears. (See Fig.29.)
5. Reverse the chassis ass'y and widen 4 poles ⓞ which secure both actuator motors to its arrows to remove the actuator motors. (See Fig.31 .)

[NOTE] The pulley gears and other gears which consist the gear unit may drop separately if the chassis ass'y is reversed without gear bracket and belt. See Fig. 32 to assemble them again.

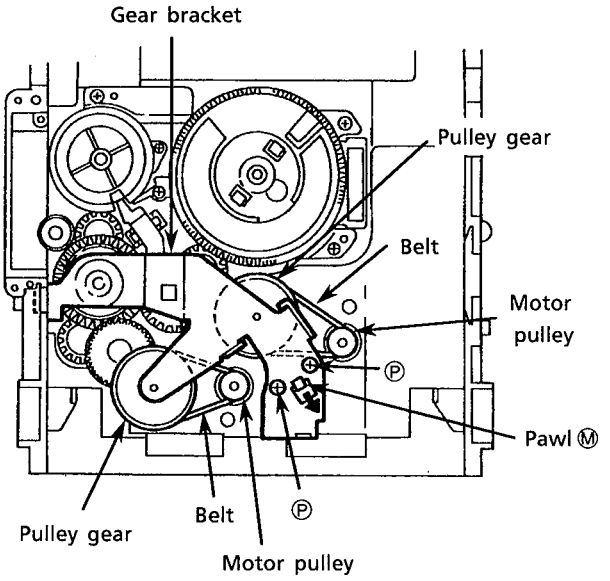


Fig. 29

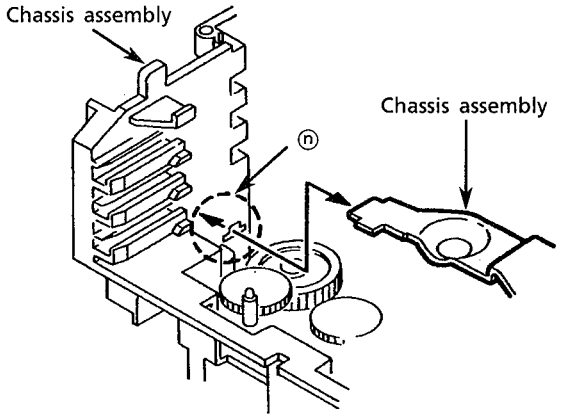


Fig. 30

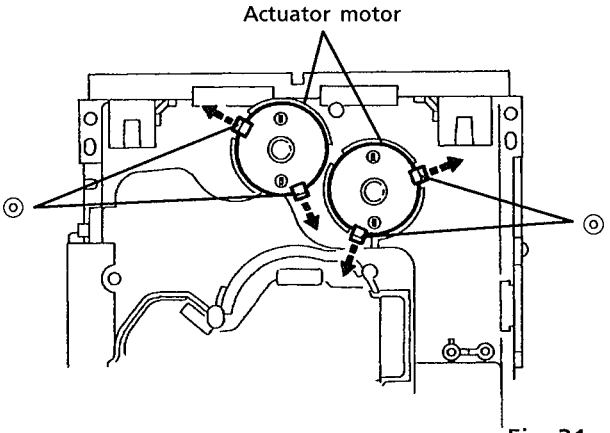


Fig. 31

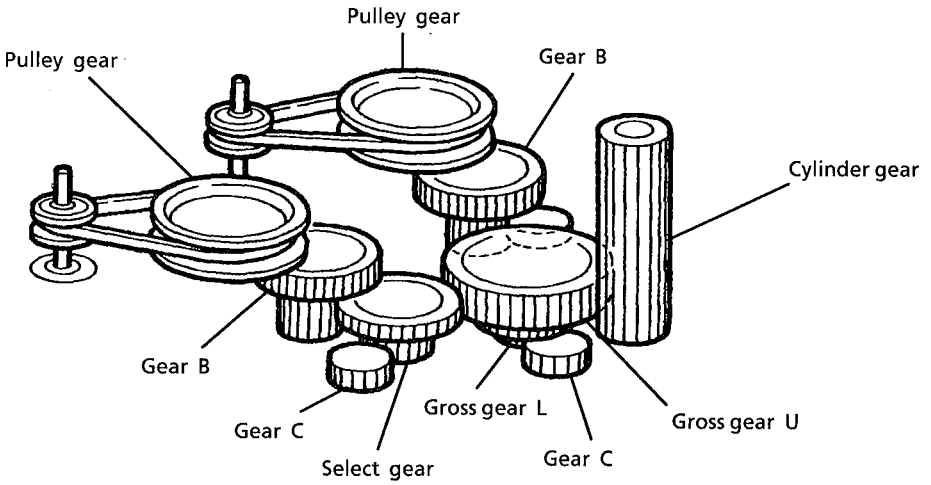


Fig. 32

Ⓘ .. DPSP2616Z

(17) Removal of cam R1, R2 ass'y and cam gear L

1. Remove the slit washer securing Cam R1, R2 ass'y.
   (See Fig. 33.)
2. Remove 2 poles Ⓟ securing Cam R1 to remove Cam R2 from Cam R1.
3. Remove the slit washer securing Cam gear L.
4. Remove Cam gear L from the C.G. base ass'y.

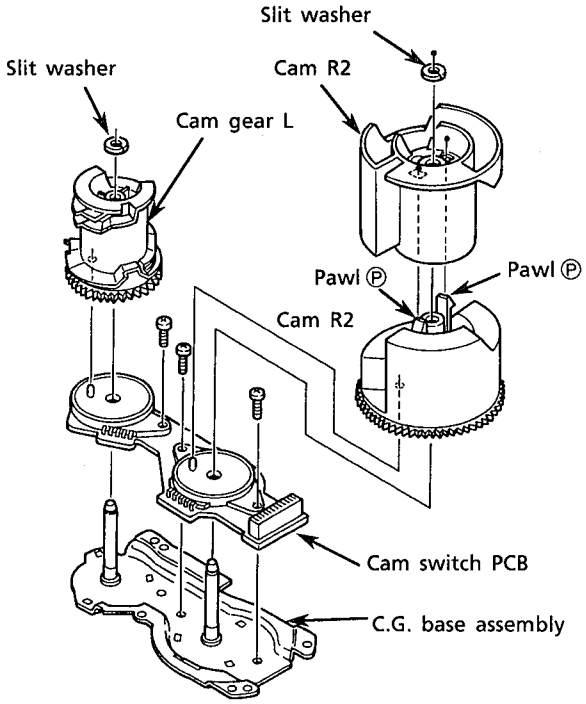


Fig. 33

(18) Removal of C.G. base ass'y

Remove 3 screws Ⓠ securing the C.G. base ass'y. (See Fig. 33 and 34.)

[NOTE] Set the drive unit's pawl Ⓡ so that it is positioned as shown in Fig. 34.
Confirm that the cam gear L engages with the gear unit by rotating the cam gear L.

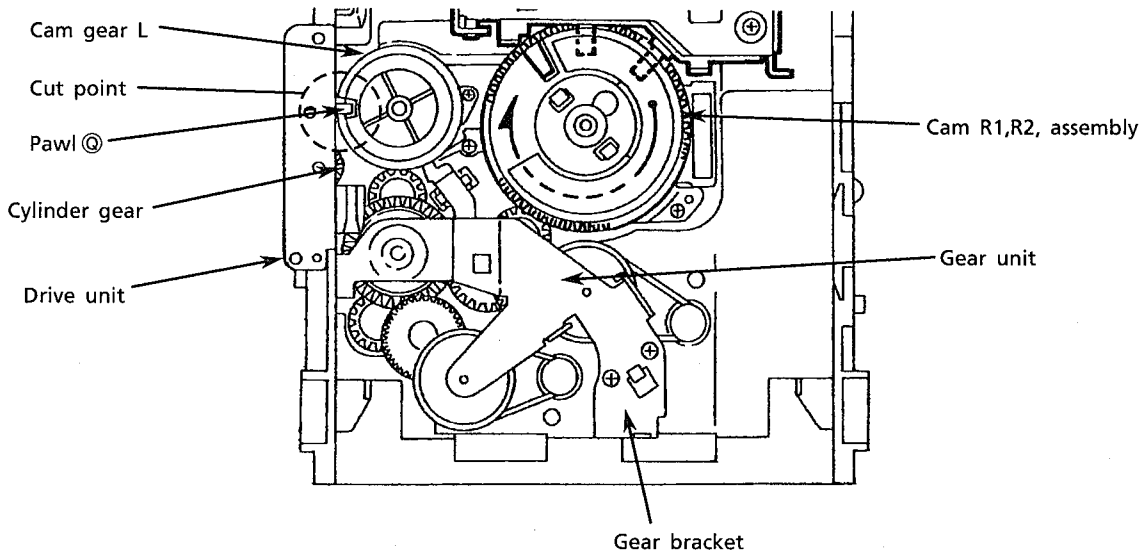


Fig. 34

Ⓠ .. SPST2606Z

(19) Removing the Pickup
1. Remove the CD mech. assembly.
2. Release the shaft to remove the pickup.

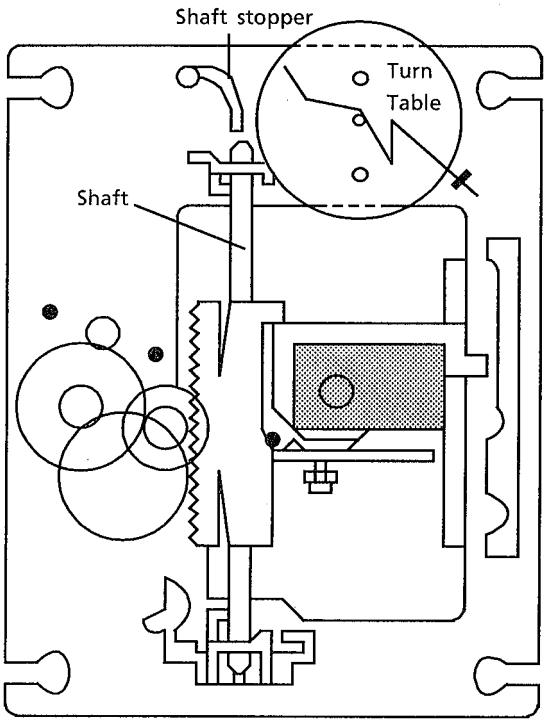


Fig. 35

(20) Spindle motor installation
1. Tighten the 2 screws to the same torque.
2. Fasten the spindle and feed motor P.C. board with the screw and solder.
3. Install the turntable.When installing, press straight down at the center of the turntable until the distance from the surface of the mech. base to the turntable is exactly 19.4±0.1mm.

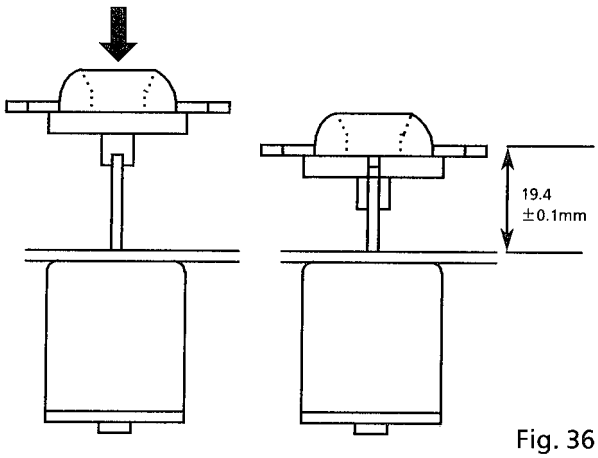


Fig. 36

(21) Removing the Spindle motor
1. Remove the CD mech. assembly.
2. Remove the turntable, and remove the 2 screws Ⓧ retaining the spindle motor.
3. Remove the screw retaining the spindle and feed motor circuit board and unsolder it.

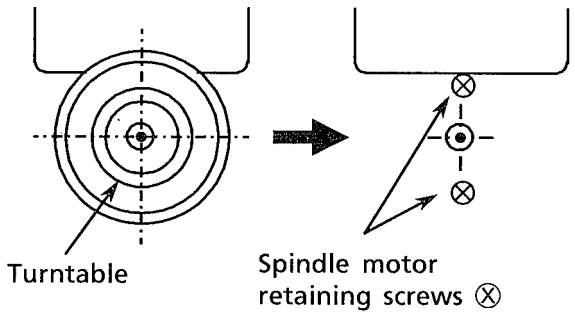


Fig. 37

(22) After inserting the turntable, bond the motor shaft and turntable together (at the section marked by an arrow in fig 46 on the left below).

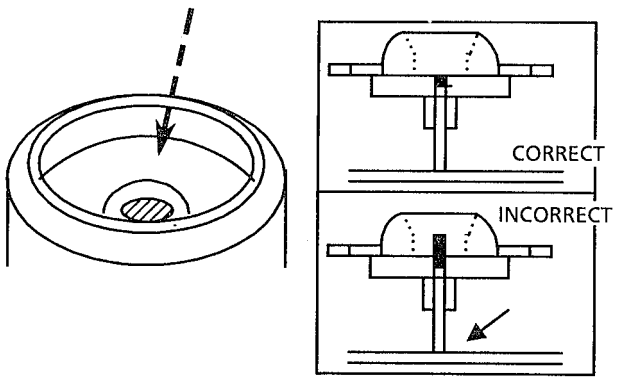


Fig. 38

(23) Use "LOCKTITE" #460 bonding agent, and apply as little as possible.

Take care not to allow any excess bonding agent to get onto the turntable.

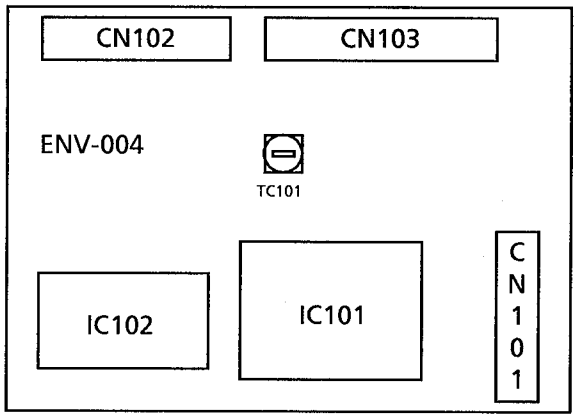
Be extremely careful not to allow bonding agent to adhere to the motor bearing (the section marked by an allow in fig. 38 on the right).

Ⓧ .. SDSP2003N

Adjustment procedures

■ Video CD section

Top view



Bottom view

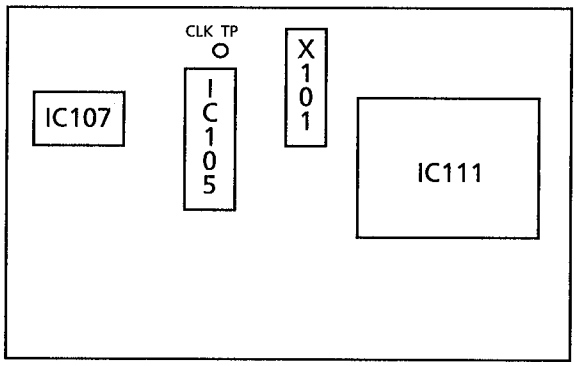


Fig 1

■ Frequency for coror adiustment

1. Measuring instruments
   1) Frequency counter
   2) Driver for adjustment

2. Adiustment procedure
   1) Connect a Frequency counter to the CLK TP and GND.
   2) Adjust TC101 so that the frequency becomes 3375000±10HZ.

■ Wireless-mic tuner section **(Only XL-MV55GD)**

(Notice) For this adjustment, please carry the wireless microphone together with XL-MV55GD to the service centre.
Tune a FM tuner, etc. which you have in 92.5MHz and set the wireless microphone ON to check the correct sound output. Then, follow the adjustment procedure below.

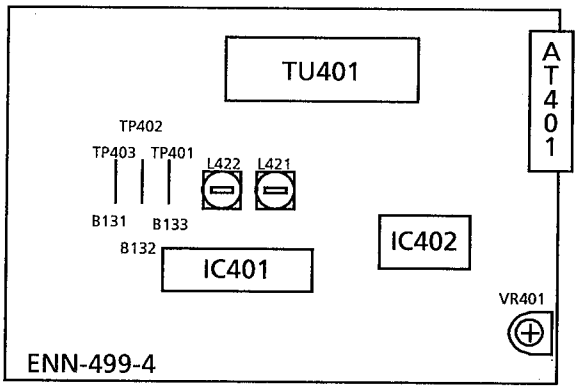


Fig 2

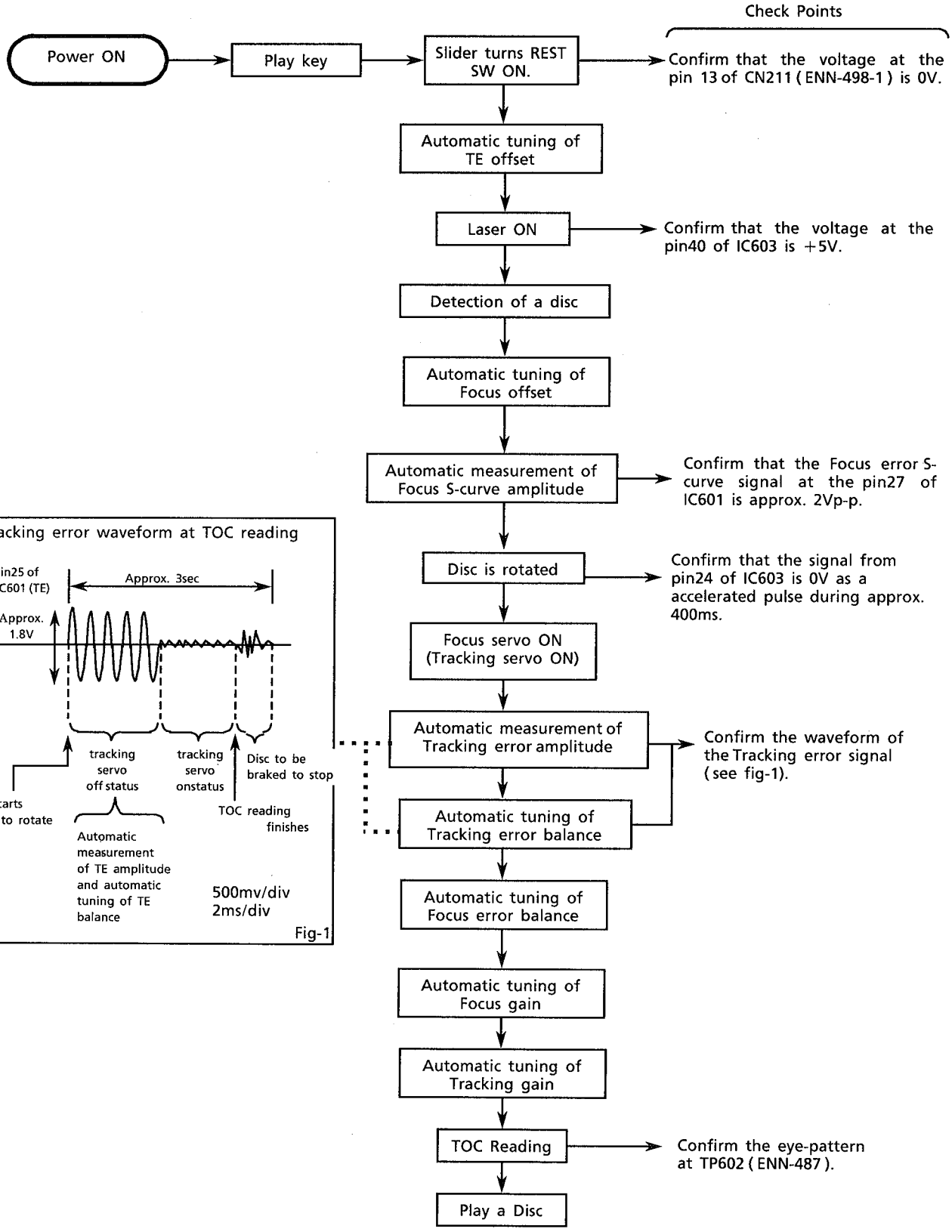
FREQUENCY ADJUSTMENT

1. Press the wireless button on the front of the unit to turn its power ON.

2. Check that indicator of the wireless button changes from red to green, i.e. normal sound is being output.

3. Adjust VR401 so that voltage between TP401 and TP402 becomes 0±50mV.

Flow of Functional Operation Until TOC is Read

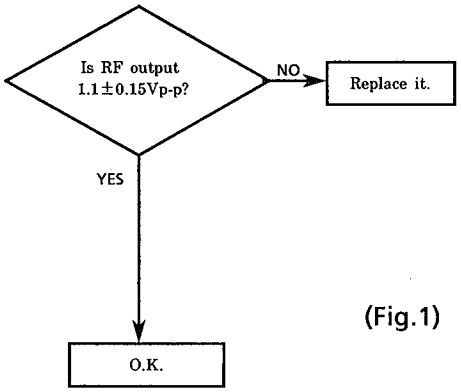

Check Points
Power ON
Play key
Slider turns REST SW ON.
Confirm that the voltage at the pin 13 of CN211 (ENN-498-1) is 0V.
Automatic tuning of TE offset
Laser ON
Confirm that the voltage at the pin40 of IC603 is +5V.
Detection of a disc
Automatic tuning of Focus offset
Automatic measurement of Focus S-curve amplitude
Confirm that the Focus error S-curve signal at the pin27 of IC601 is approx. 2Vp-p.
Disc is rotated
Confirm that the signal from pin24 of IC603 is 0V as a accelerated pulse during approx. 400ms.
Focus servo ON (Tracking servo ON)
Automatic measurement of Tracking error amplitude
Confirm the waveform of the Tracking error signal (see fig-1).
Automatic tuning of Tracking error balance
Automatic tuning of Focus error balance
Automatic tuning of Focus gain
Automatic tuning of Tracking gain
TOC Reading
Confirm the eye-pattern at TP602 (ENN-487).
Play a Disc
■ Tracking error waveform at TOC reading
pin25 of IC601 (TE)
Approx. 3sec
Approx. 1.8V
VREF
tracking servo off status
tracking servo onstatus
Disc to be braked to stop
Disc starts to rotate
TOC reading finishes
Automatic measurement of TE amplitude and automatic tuning of TE balance
500mv/div
2ms/div
Fig-1

Maintenance of Laser Pickup

(1) Cleaning the pick up lens
Before you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.

(2) Life of the laser diode (Fig.1)
When the life of the laser diode has expired, the following symptoms will appear.

(1) The level of RF output (EFM output: amplitude of eye pattern) will be low.



(Fig.1)

(3) Semi-fixed resistor on the APC PC board
The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.
If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced.
If the semi-fixed resistor is adjusted while the pickup is functioning normally, the laser pickup may be damaged due to excessive current.

Replacement of Laser Pickup

Turn off the power switch and, disconnect the power cord from the AC outlet.

↓

Replace the pickup with a normal one. (Refer to "Pickup Removal" on the previous page)

↓

Plug the power cord in, and turn the power on. At this time, check that the laser emits for about 3seconds and the objective lens moves up and down.
Note: Do not observe the laser beam directly.

→

Play a disc.

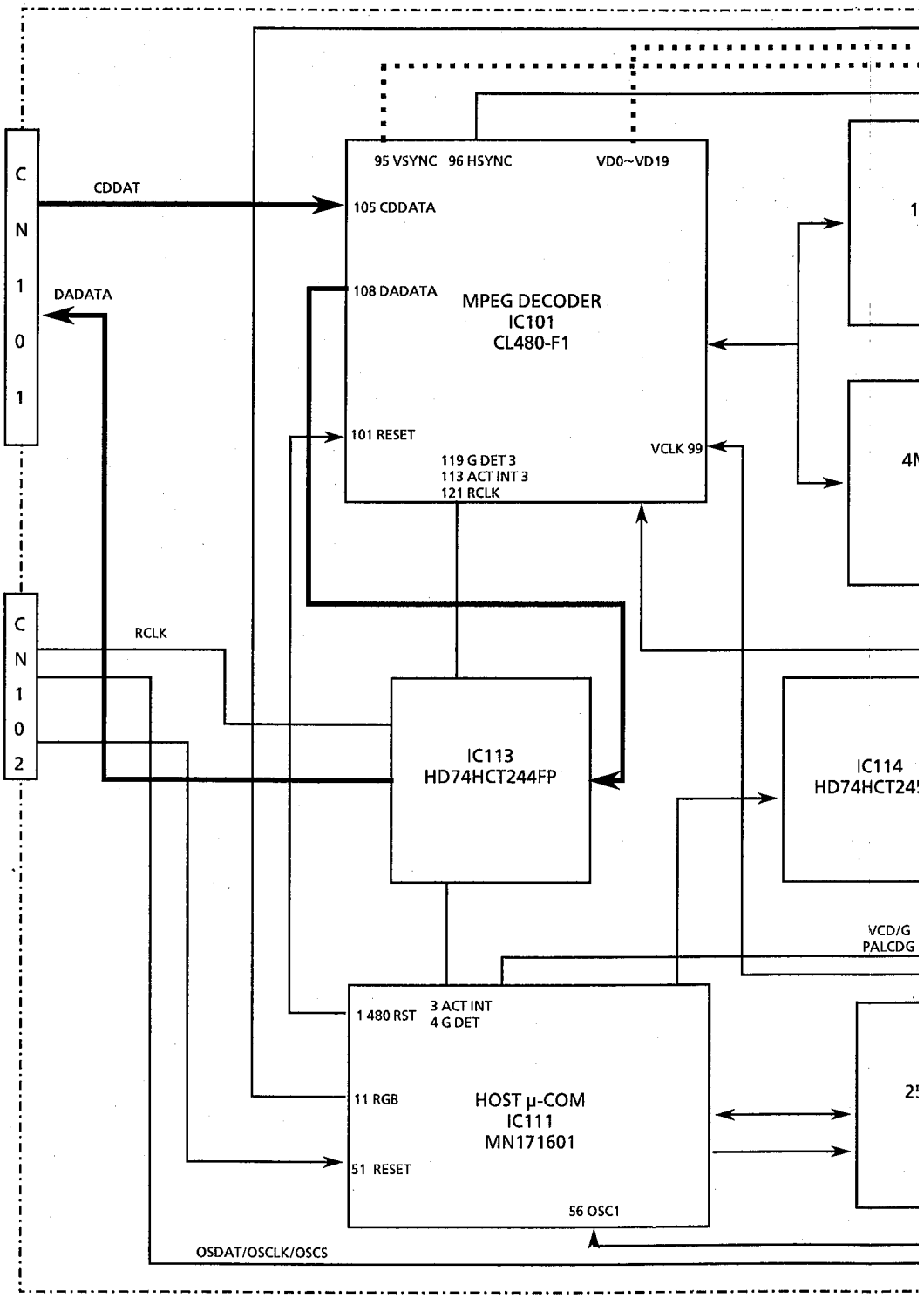
↓

Check the eye-pattern at TP602.

↓

Finish.

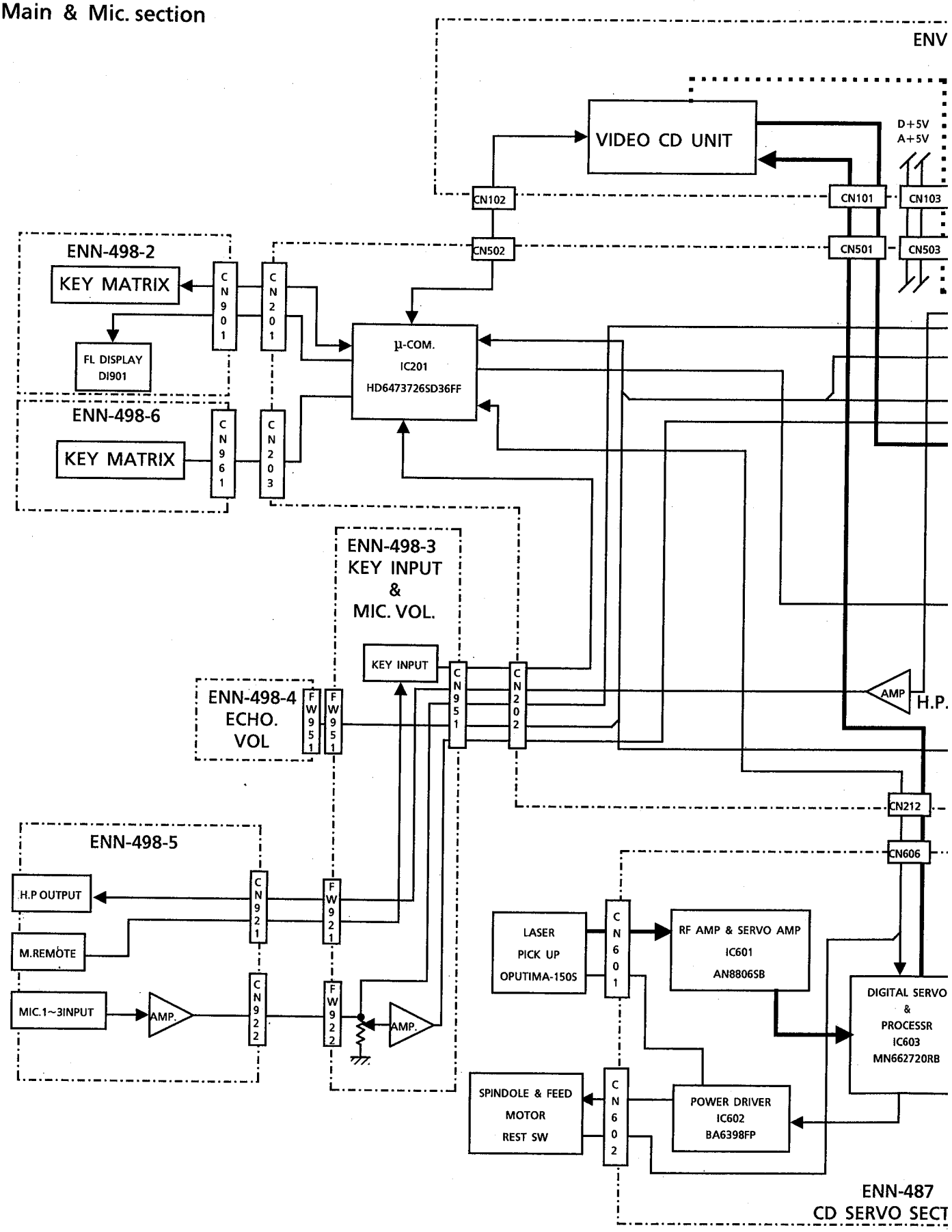
(2) Video CD Section

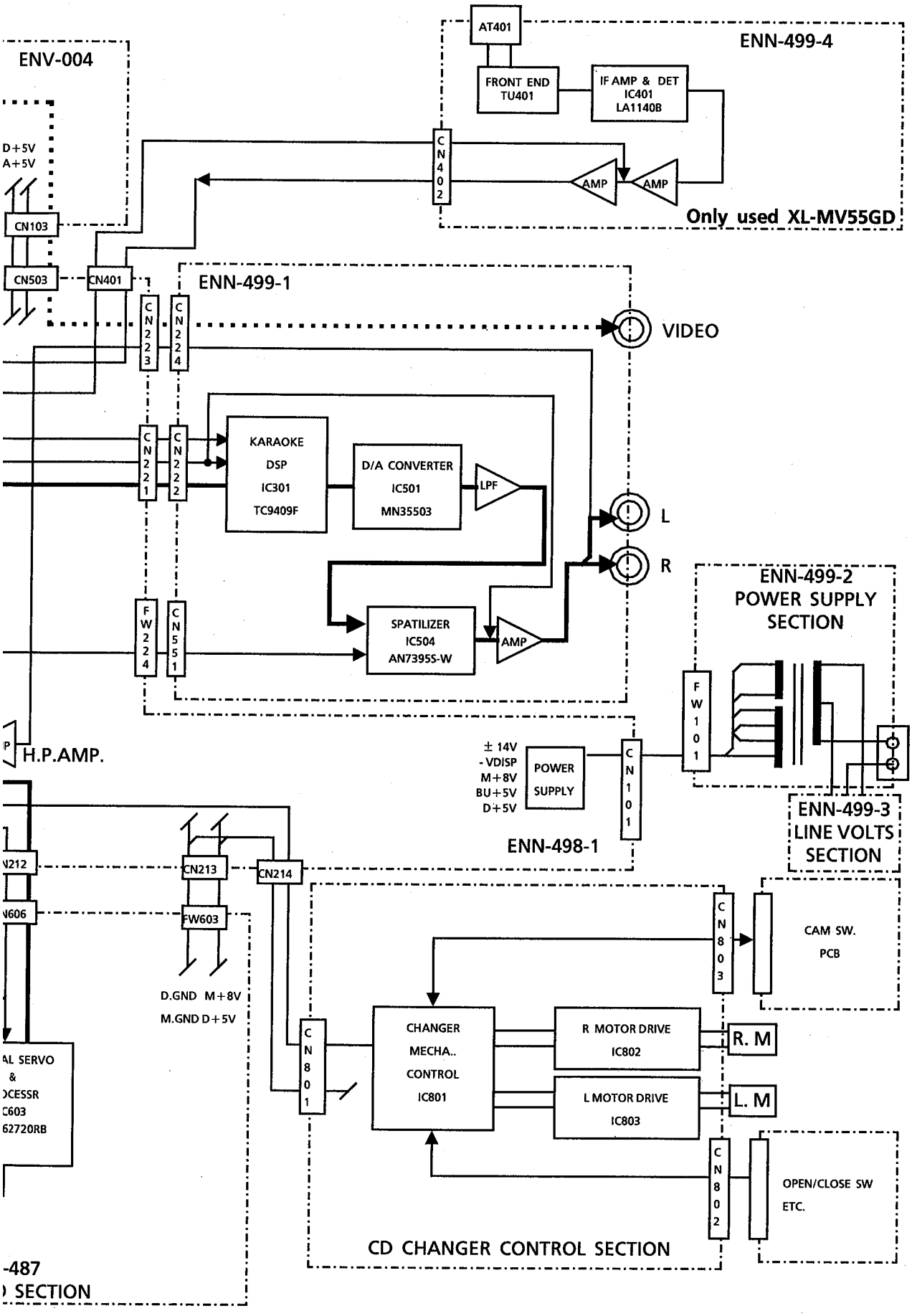


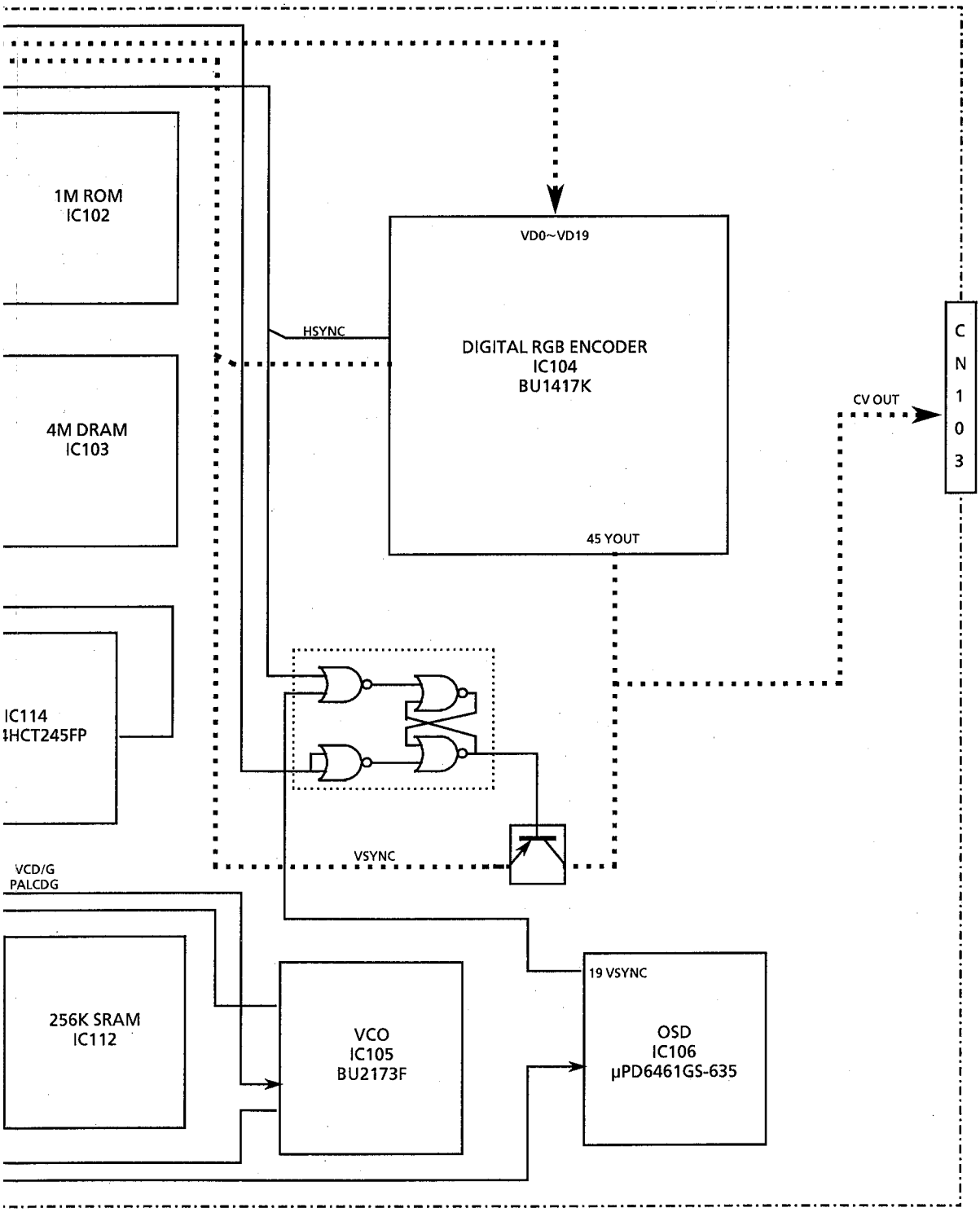
— MEMO —

Block Diagrams

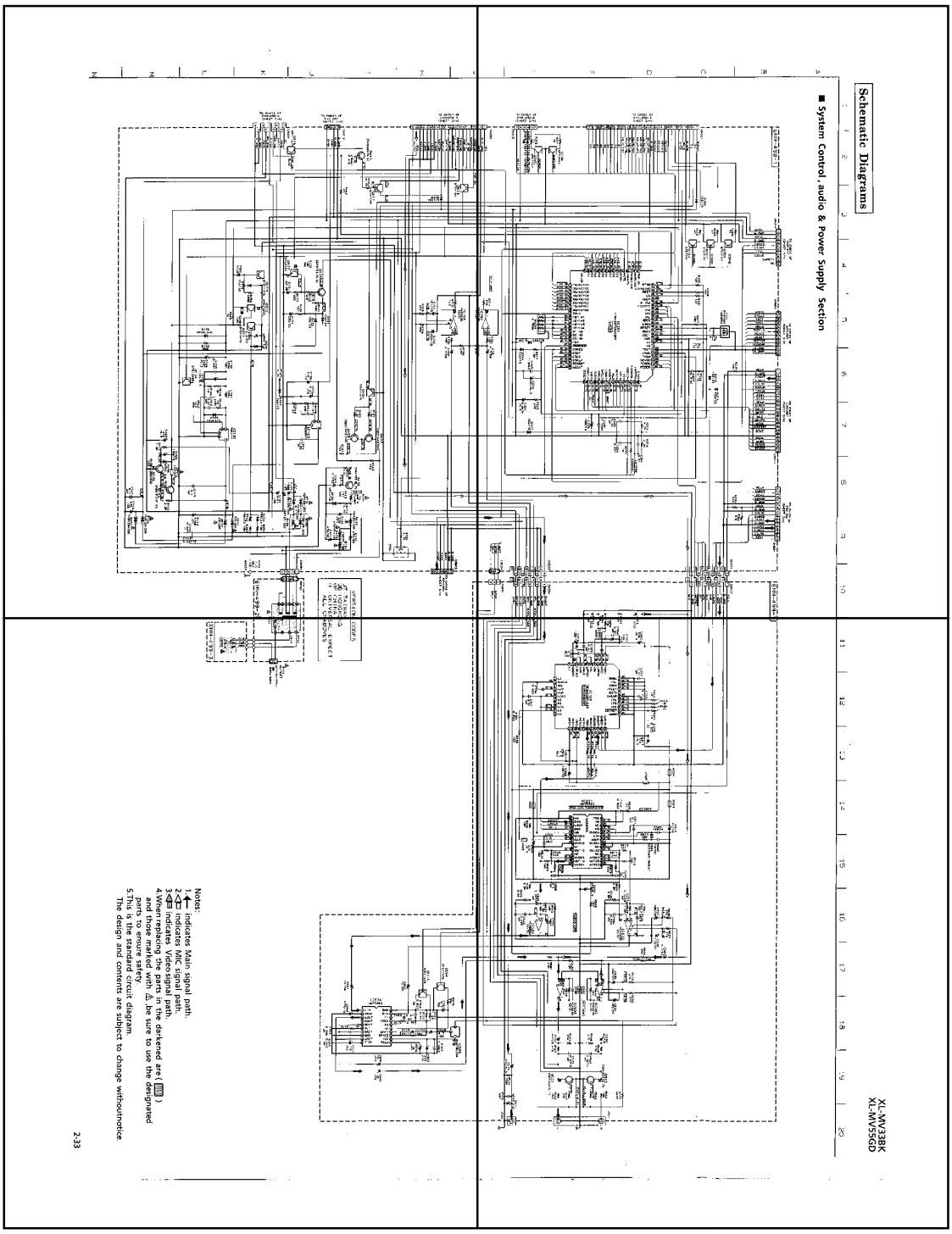
(1) Main & Mic. section



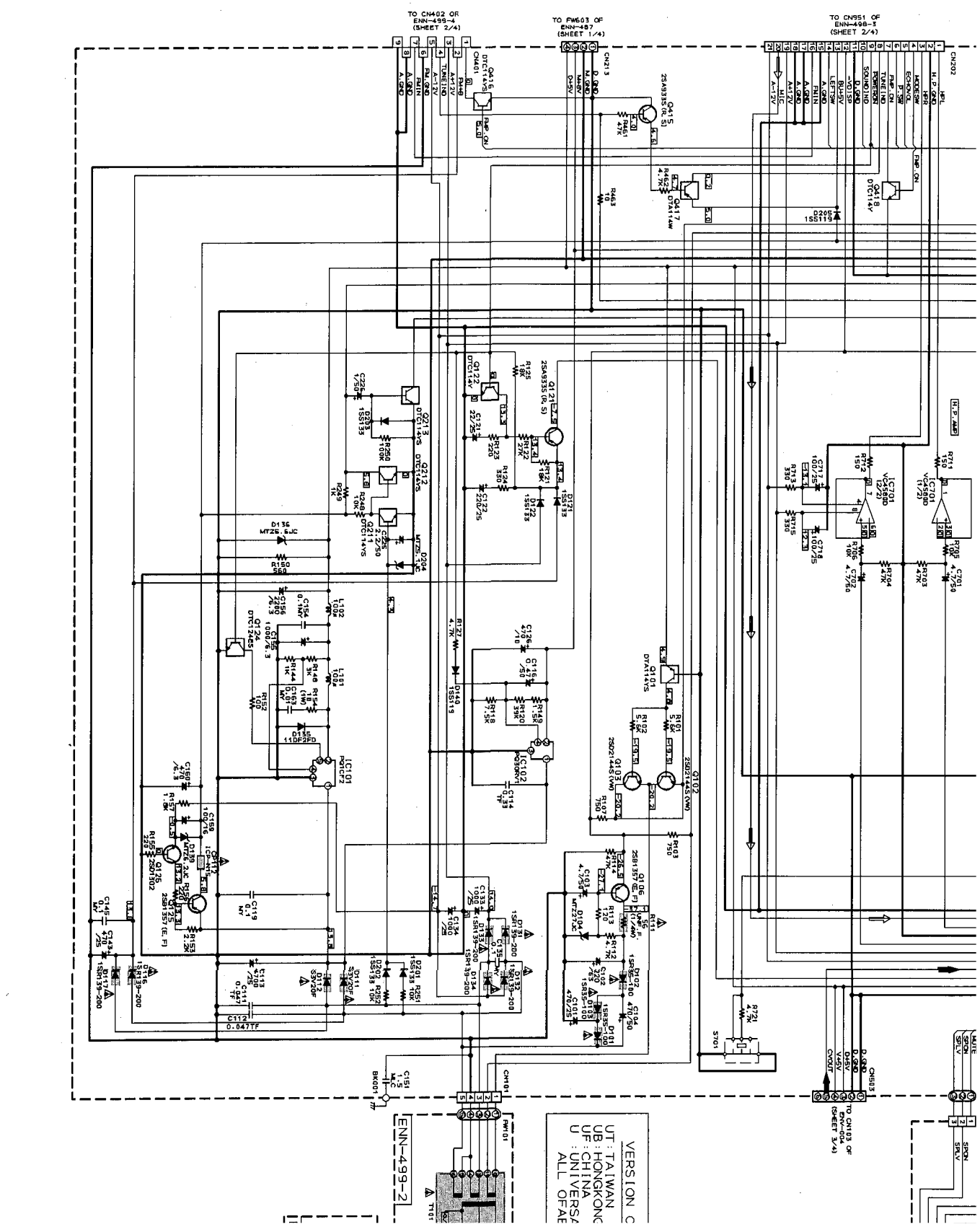

ENV-004
D+5V
A+5V
CN103
CN503
CN401
AT401
ENN-499-4
FRONT END
TU401
IF AMP & DET
IC401
LA1140B
CN402
AMP
AMP
Only used XL-MV55GD
ENN-499-1
CN223
CN224
VIDEO
CN221
CN222
KARAOKE
DSP
IC301
TC9409F
D/A CONVERTER
IC501
MN35503
LPF
L
R
FW224
CN551
SPATILIZER
IC504
AN7395S-W
AMP
ENN-499-2
POWER SUPPLY
SECTION
FW101
H.P.AMP.
± 14V
- VDISP
M+8V
BU+5V
D+5V
POWER
SUPPLY
CN101
ENN-498-1
ENN-499-3
LINE VOLTS
SECTION
CN212
CN213
CN214
FW603
D.GND M+8V
M.GND D+5V
CN803
CAM SW.
PCB
CN801
CHANGER
MECHA..
CONTROL
IC801
R MOTOR DRIVE
IC802
R. M
L MOTOR DRIVE
IC803
L. M
CN802
OPEN/CLOSE SW
ETC.
CD CHANGER CONTROL SECTION
-487
SECTION


1M ROM
IC102
4M DRAM
IC103
IC114
HCT245FP
VCD/G
PALCDG
256K SRAM
IC112
VCO
IC105
BU2173F
VD0~VD19
HSYNC
DIGITAL RGB ENCODER
IC104
BU1417K
45 YOUT
CV OUT
C
N
1
0
3
VSYNC
19 VSYNC
OSD
IC106
µPD6461GS-635

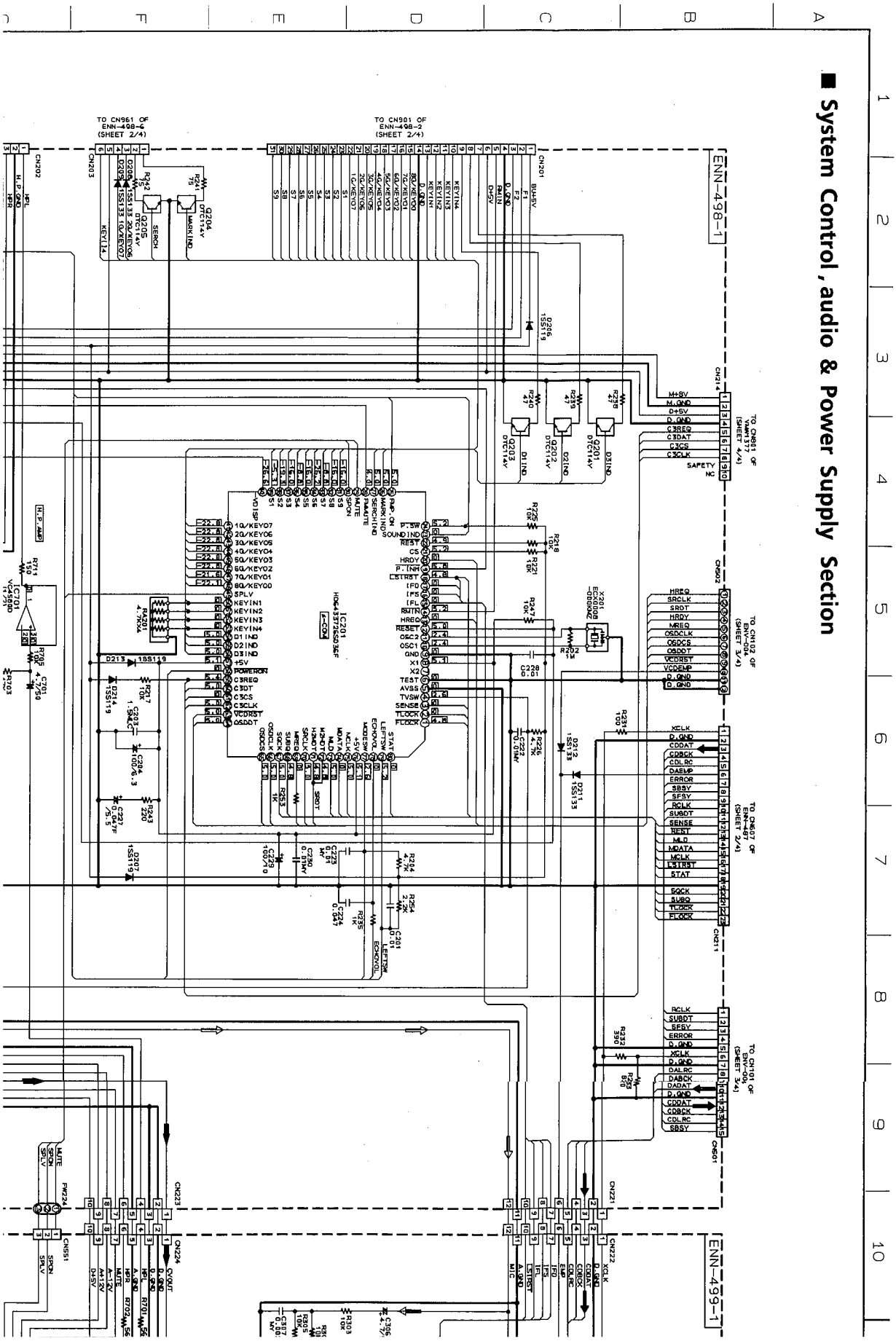
P2-33-a P2-33-b

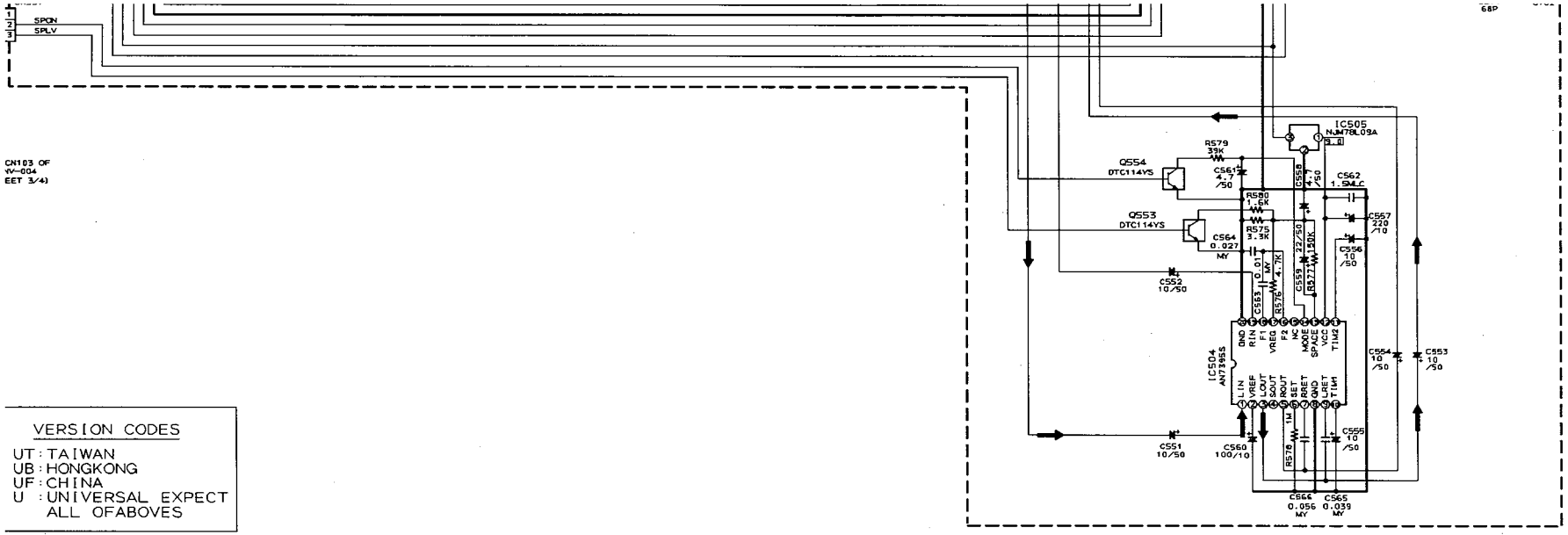

Schematic Diagrams
■ System Control, audio & Power Supply Section
XL-MV33BK
XL-MV55GD
Notes:
1. indicates Main signal path.
2. indicates MIC signal path.
3. indicates Video signal path.
4. When replacing the parts in the darkened are ( ) and those marked with ⚠ be sure to use the designated parts to assure safety.
5. This is the standard circuit diagram.
The design and contents are subject to change withoutnotice.
2-33

P2-33-c P2-33-d


TO CN402 OR ENN-499-4 (SHEET 2/4)
TO FW603 OF ENN-467 (SHEET 1/4)
TO CN951 OF ENN-498-3 (SHEET 2/4)
TO CN103 OF ENN-004 (SHEET 3/4)
ENN-499-2
VERSION C
UT : TAIWAN
UB : HONGKONG
UF : CHINA
U : UNIVERSA
ALL OFAE

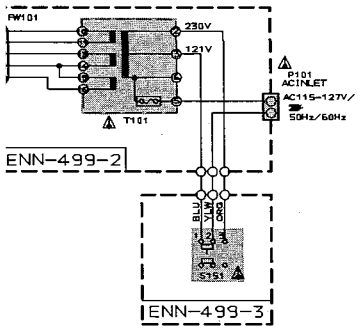
■ System Control , audio & Power Supply Section





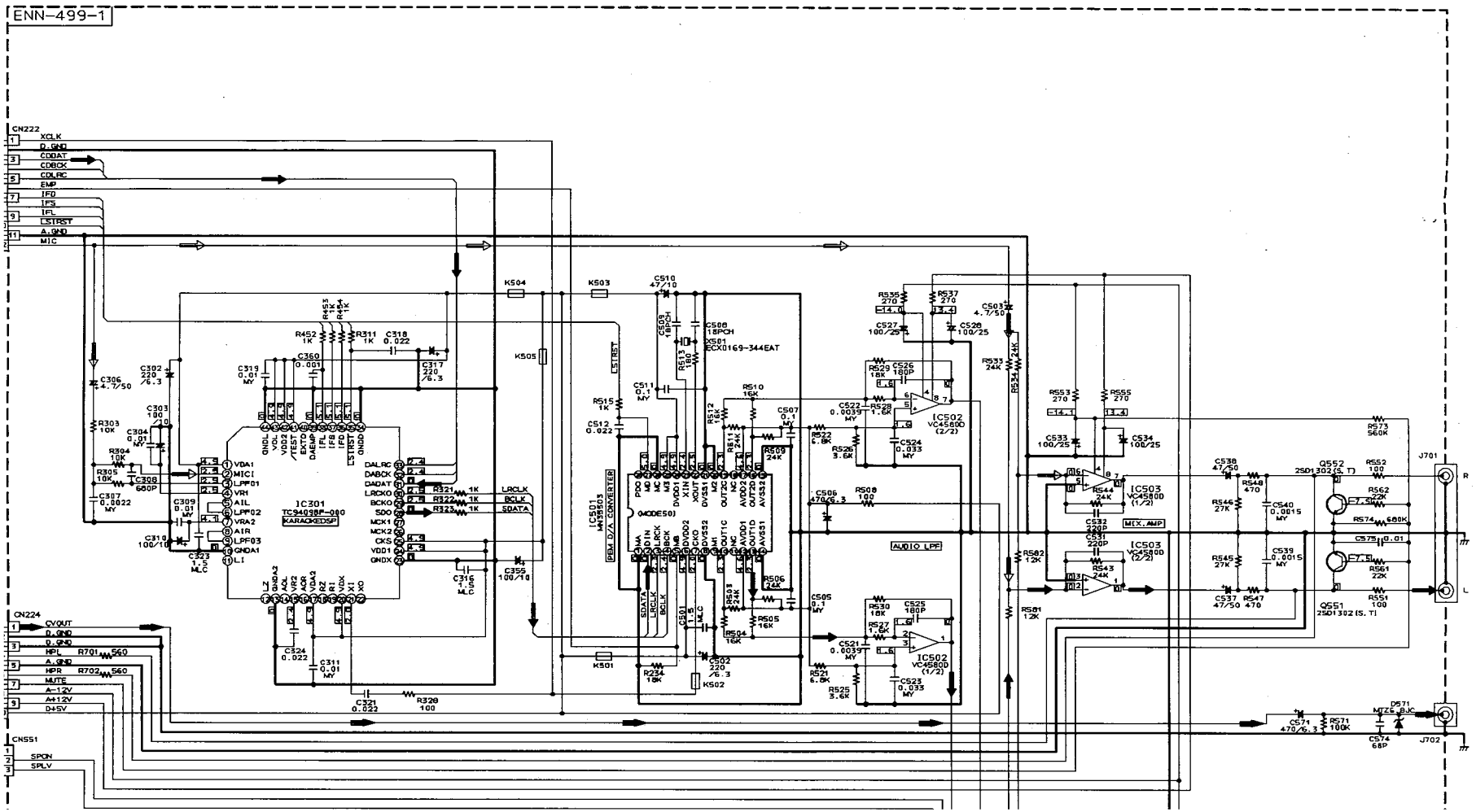
VERSION CODES

UT : TAIWAN
UB : HONGKONG
UF : CHINA
U : UNIVERSAL EXPECT ALL OFABOVES

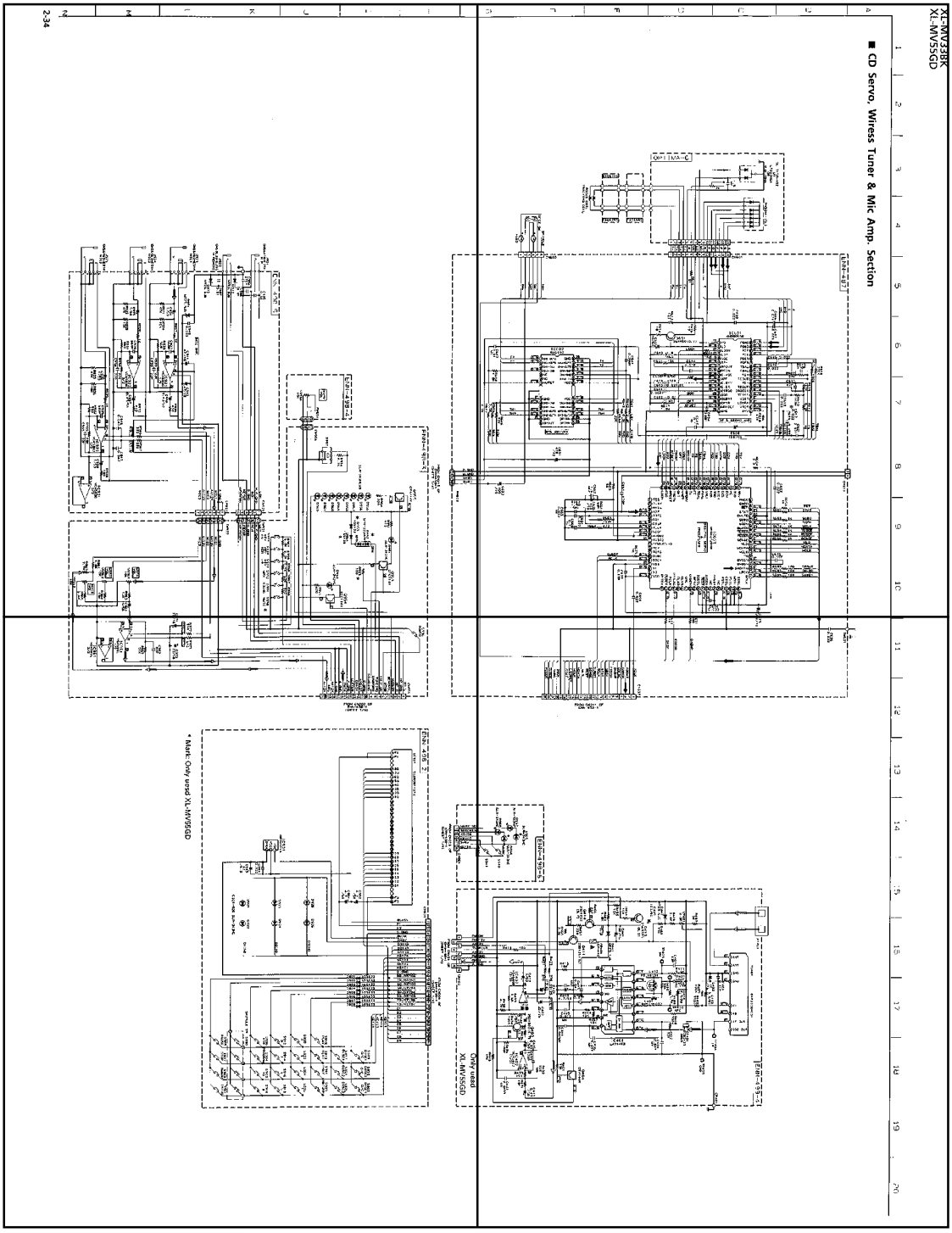


Notes:

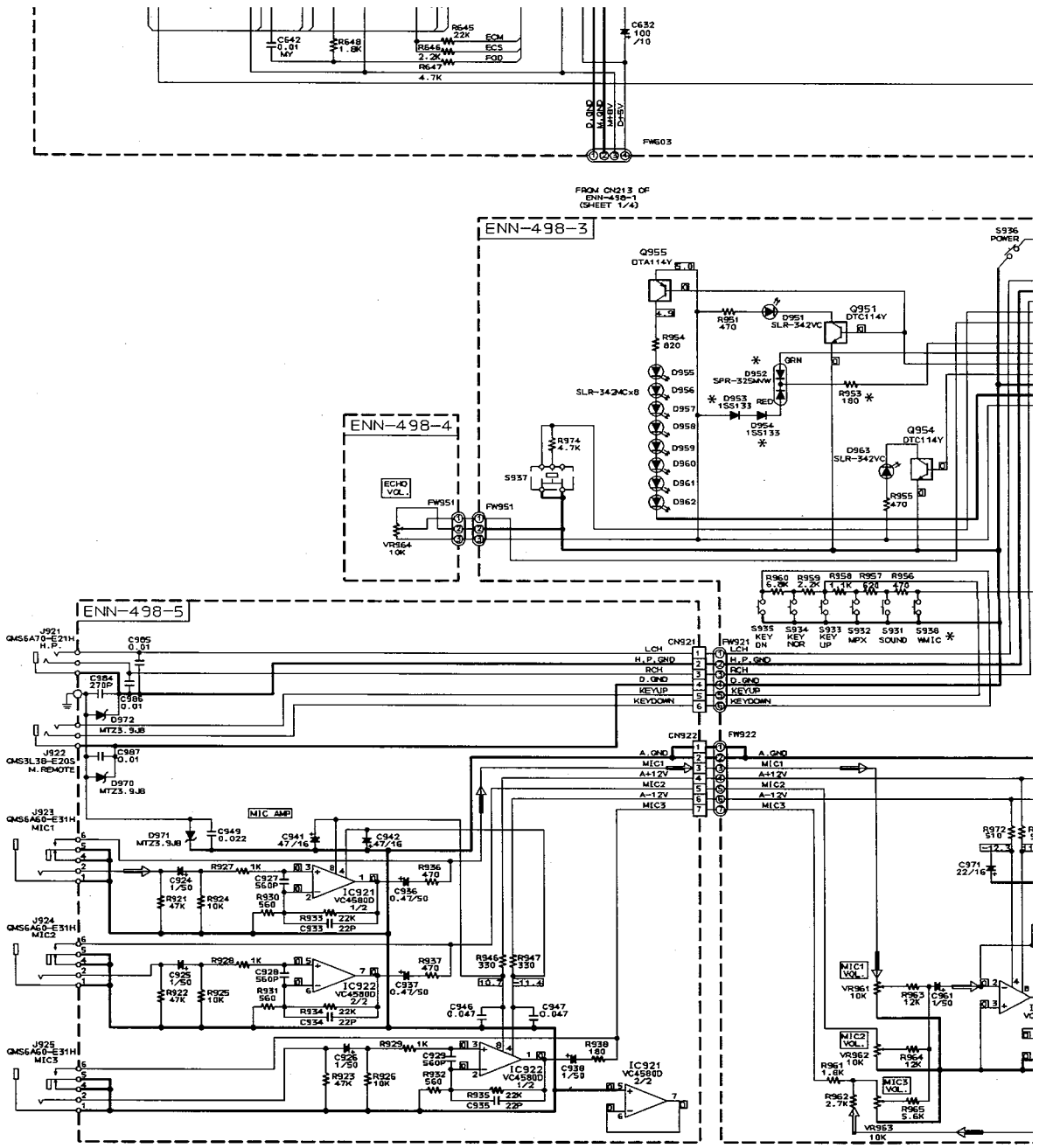
1. ← indicates Main signal path.
2. ◁ indicates MIC signal path.
3. ◀ indicates Video signal path.
4. When replacing the parts in the darkened are (▩) and those marked with ⚠ ,be sure to use the designated parts to ensure safety.
5. This is the standard circuit diagram. The design and contents are subject to change withoutnotice.


10
11
12
13
14
15
16
17
18
19
20
ENN-499-1
CN222
XCLK
D.GND
CDOAT
CDBCK
CDLRC
EMP
IFD
IFS
IFL
LSTRST
A.GND
MIC
CN224
CVOUT
D.GND
D.GND
HPL
A.GND
HPR
MUTE
A-12V
A+12V
D+5V
CN551
SPCN
SPLV
IC301
TC94098F-080
KARAOKEDSP
IC501
AK5801
PCM D/A CONVERTER
IC502
VC4580D
(1/2)
IC503
VC4580D
(2/2)
AUDIO LPF
MIX. AMP
LRCLK
BCLK
SDATA
LSTRST
J701
J702
Q551
2SD1302(S.T)
Q552
2SD1302(S.T)
D571
MTZ5.6JC

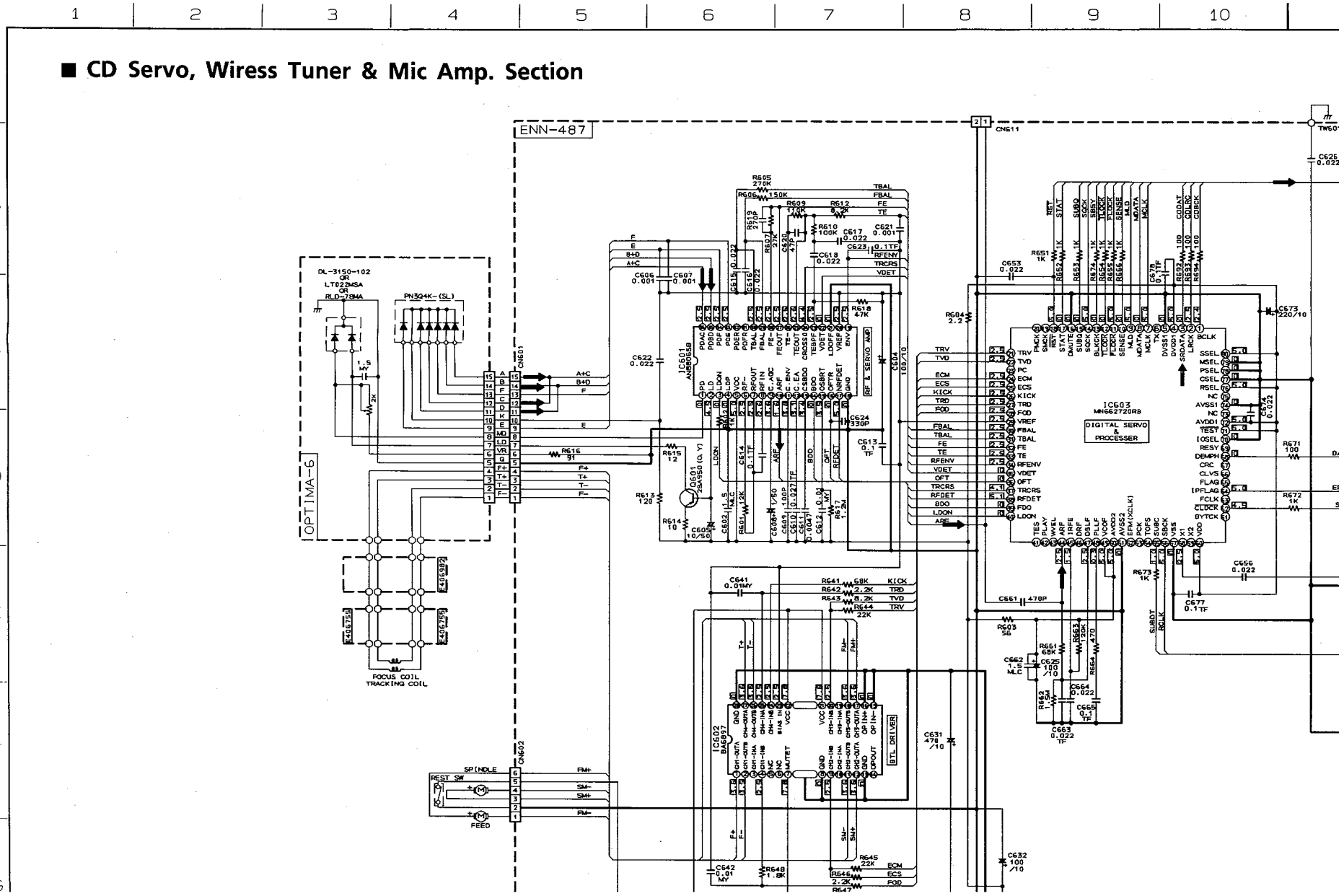
P2-34-a P2-34-b

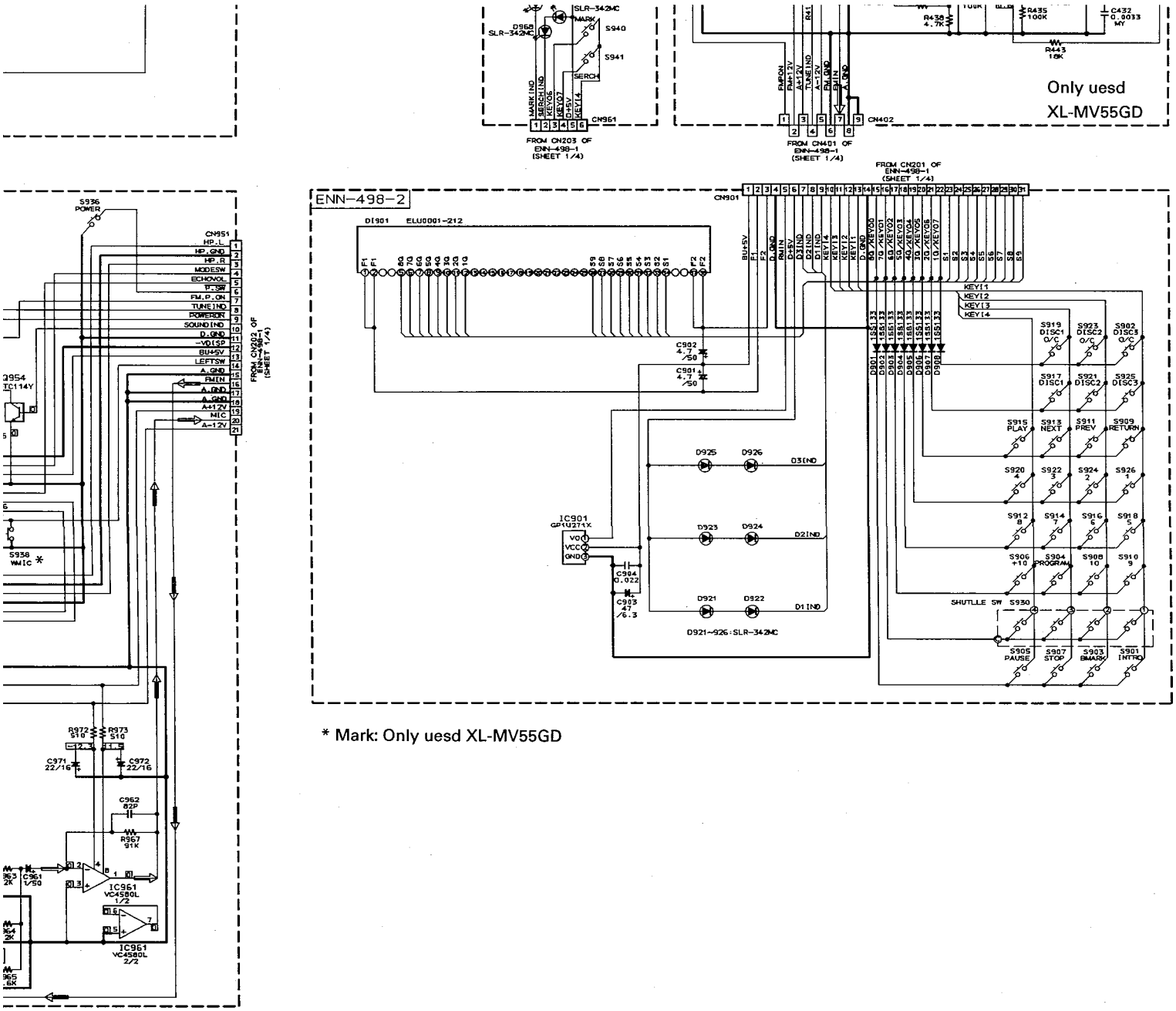


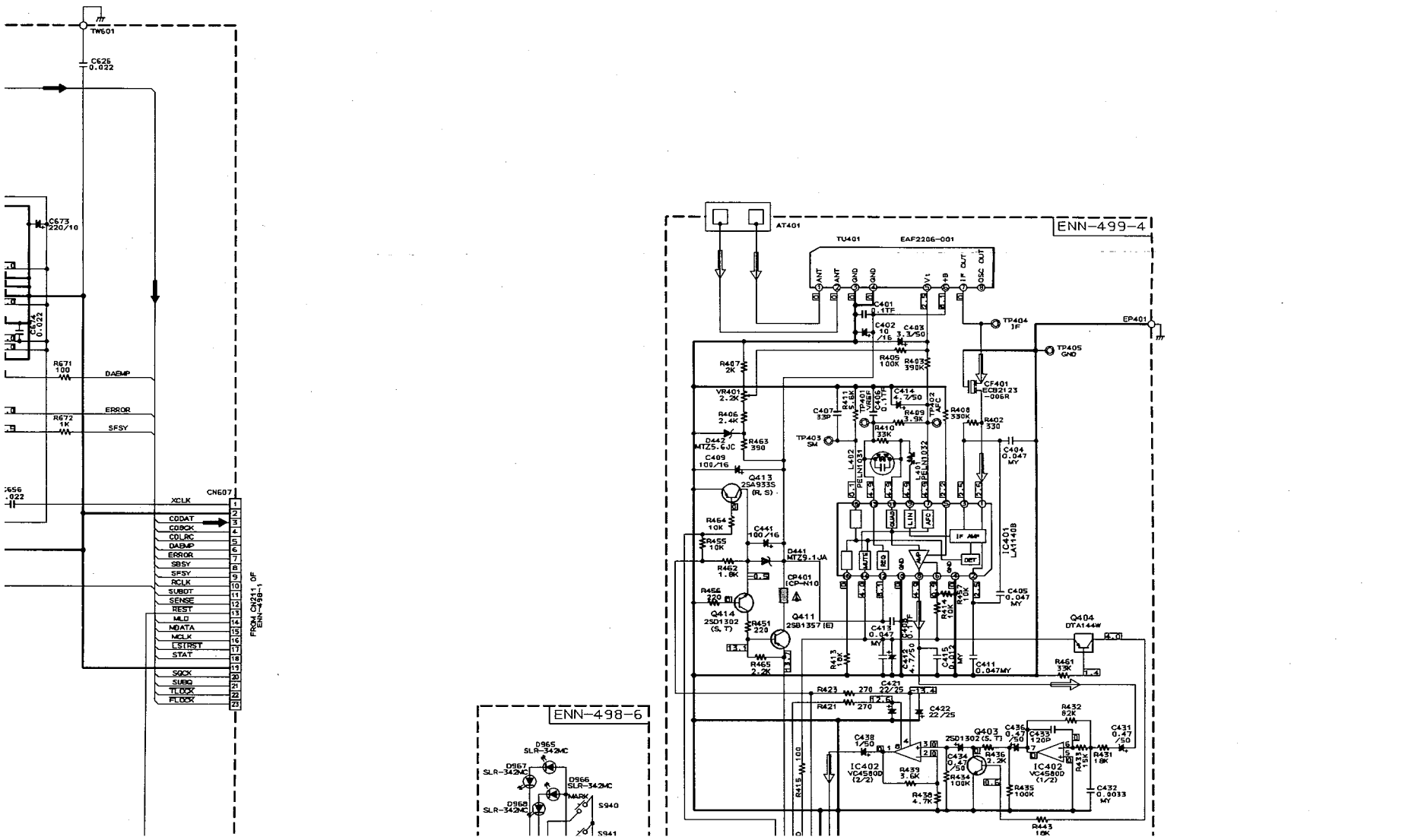
P2-34-c P2-34-d


ENN-498-3
ENN-498-4
ENN-498-5
FROM CN213 OF ENN-498-1 (SHEET 1/4)
FW603
D.GND
M.5V
D+5V
ECM
ECS
FGD
Q955 DTA114Y
Q951 DTC114Y
Q954 DTC114Y
D951 SLR-342VC
D952 SPR-325MW
D953 1SS133
D954 1SS133
D963 SLR-342VC
SLR-342MC×8
D955
D956
D957
D958
D959
D960
D961
D962
S936 POWER
S937
S935 KEY DN
S934 KEY NOR
S933 KEY UP
S932 MPX
S931 SOUND
S938 MIC
ECHO VOL.
VR964 10K
FW951
CN921
FW921
CN922
FW922
H.P.GND
RCH
D.GND
KEYUP
KEYDOWN
A.GND
MIC1
A-12V
MIC2
MIC3
J921 QMS6A70-E21H H.P.
J922 QMS3L38-E20S M.REMOTE
J923 QMS6A60-E31H MIC1
J924 QMS6A60-E31H MIC2
J925 QMS6A60-E31H MIC3
MIC AMP
IC921 VC4580D 1/2
IC921 VC4580D 2/2
IC922 VC4580D 1/2
IC922 VC4580D 2/2
MIC1 VOL.
MIC2 VOL.
MIC3 VOL.
VR961 10K
VR962 10K
VR963 10K

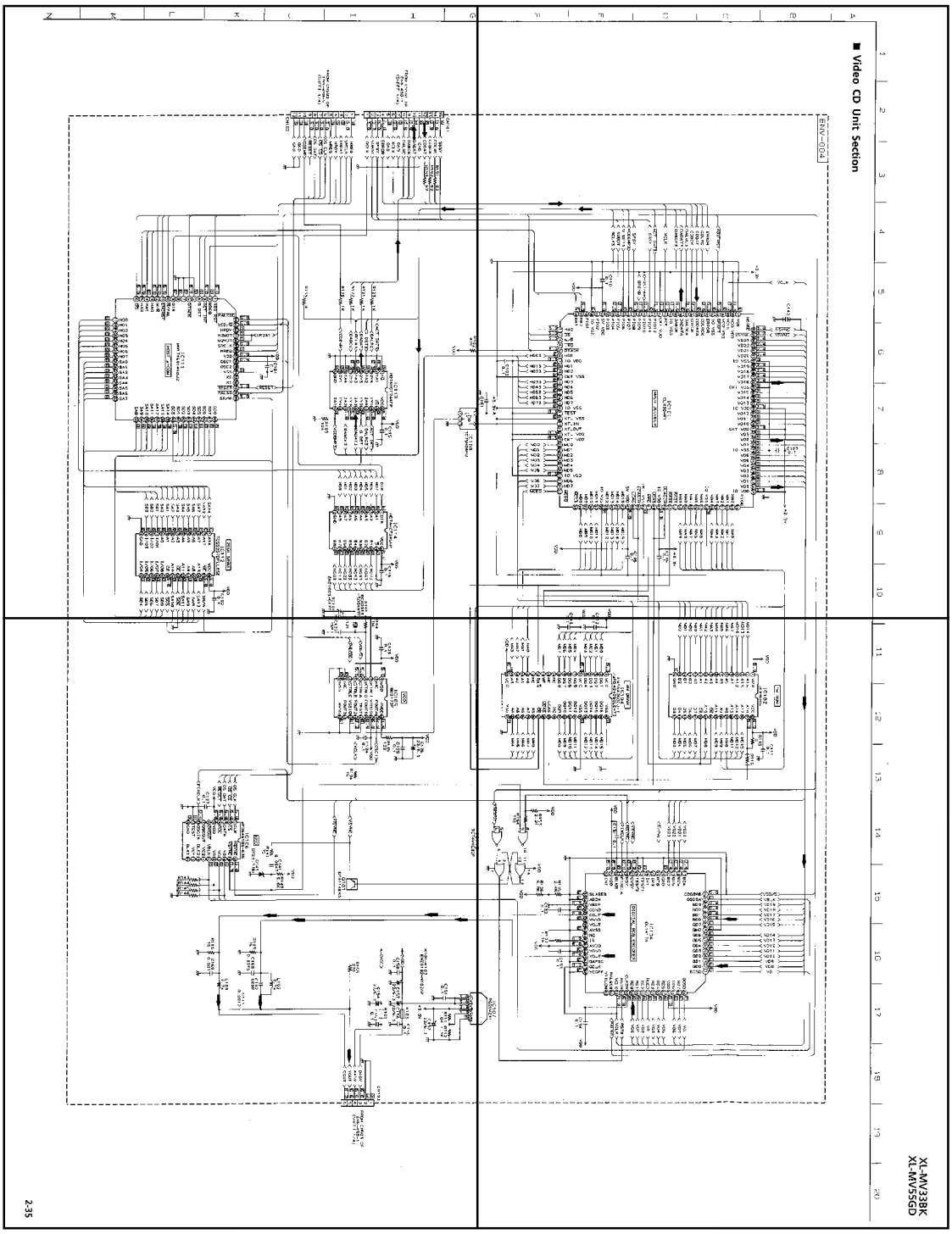
■ CD Servo, Wiress Tuner & Mic Amp. Section



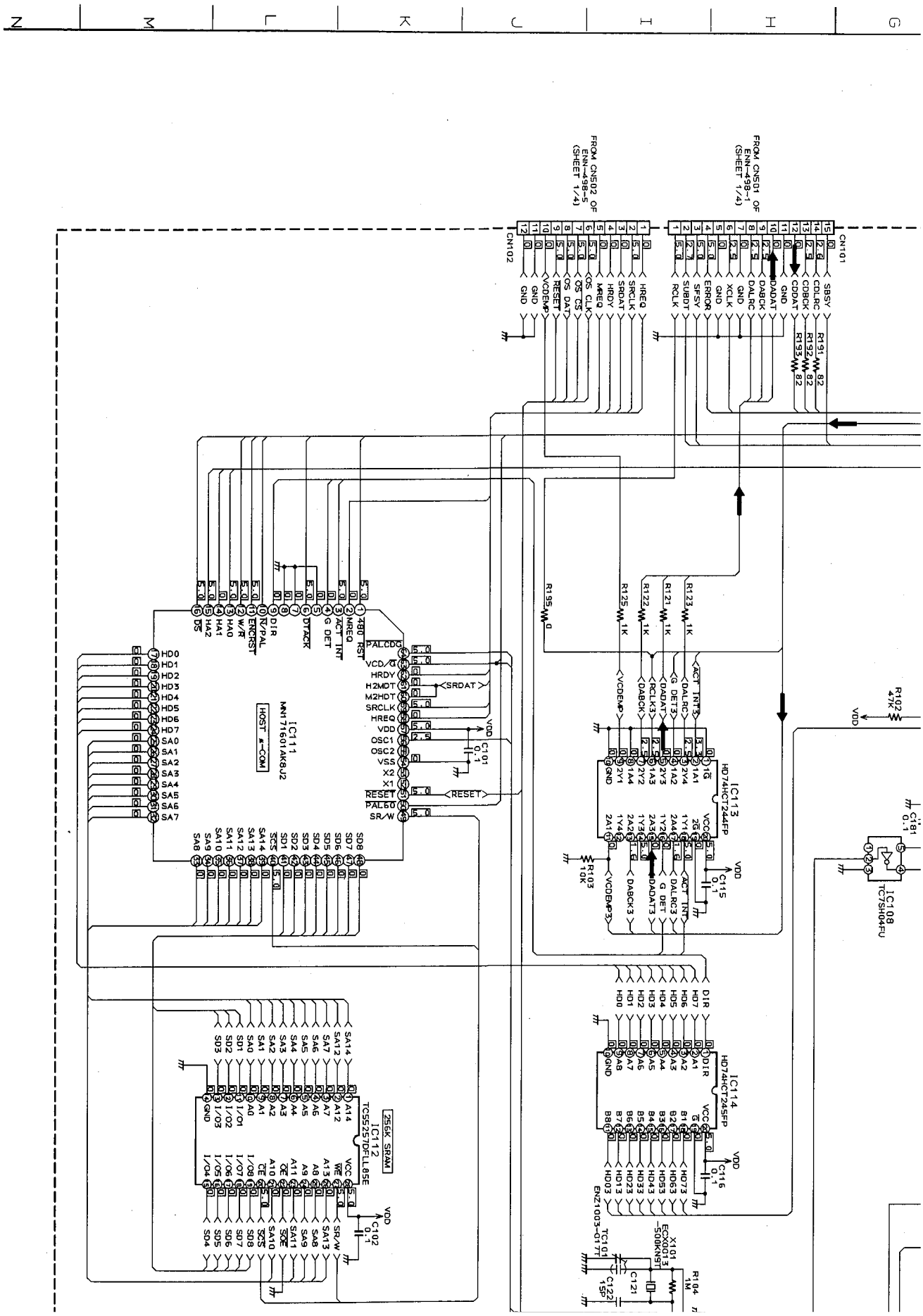

ENN-498-2
Only uesd
XL-MV55GD
* Mark: Only uesd XL-MV55GD


11
12
13
14
15
16
17
18
19
20
TW601
C625 0.022
C673 220/10
C674 0.022
R671 100
DABMP
R672 1K
ERROR
SFSY
CN607
XCLK
CODAT
COBCK
COLRC
DABMP
ERROR
SBSY
SFSY
RCLK
SUBDT
SENSE
REST
MLD
MDATA
MCLK
LSIRST
STAT
SQCK
SUBQ
TLOCK
FLOCK
FROM CN211, 0F ENN-498-1
ENN-498-6
D965 SLR-342MC
D967 SLR-342MC
D966 SLR-342MC
D968 SLR-342MC
MARK
S940
S941
ENN-499-4
AT401
TU401
EAF2206-001
ANT
ANT
GND
GND
Vt
+B
IF OUT
OSC OUT
C401 .1TF
C402 10/16
C403 3.3/50
TP404 IF
EP401
TP405 GND
R405 100K
R403 390K
R467 2K
VR401 2.2K
CF401 ECB2123-006R
C414 4.7/50
C407 33P
R406 2.4K
R409 3.9K
R408 330K
R402 330
R410 33K
TP403 SM
D442 MTZ5.6JC
R463 390
C409 100/16
C404 0.047 MY
L402 PELN1031
L401 PELN1032
Q413 2SA933S (R, S)
R464 10K
C441 100/16
R455 10K
D441 MTZ9.1JA
R462 1.8K
CP401 CP-N10
R456 270
Q414 2SD1302 (S, T)
R451 220
Q411 2SB1357 (E)
R465 2.2K
C413 0.047 MY
C412 4.7/50
C415 0.01 MY
C411 0.047MY
IC401 LA41408
IF AMP
DET
AGC
LIN
QUAD
MUTE
REG
GND
C405 0.047 MY
R414 10K
R453 10K
Q404 DTA144W
R461 33K
C421 22/25
R423 270
R421 270
C422 22/25
R432 82K
C438 1/50
Q403 2SD1302 (S, T)
C436 0.47/50
C433 120P
R431 18K
C431 0.47/50
IC402 VC4580D (2/2)
R433 3.6K
C434 0.47/50
R436 2.2K
IC402 VC4580D (1/2)
R434 100K
R435 100K
C432 0.0033 MY
R438 4.7K
R443 18K
R415 100

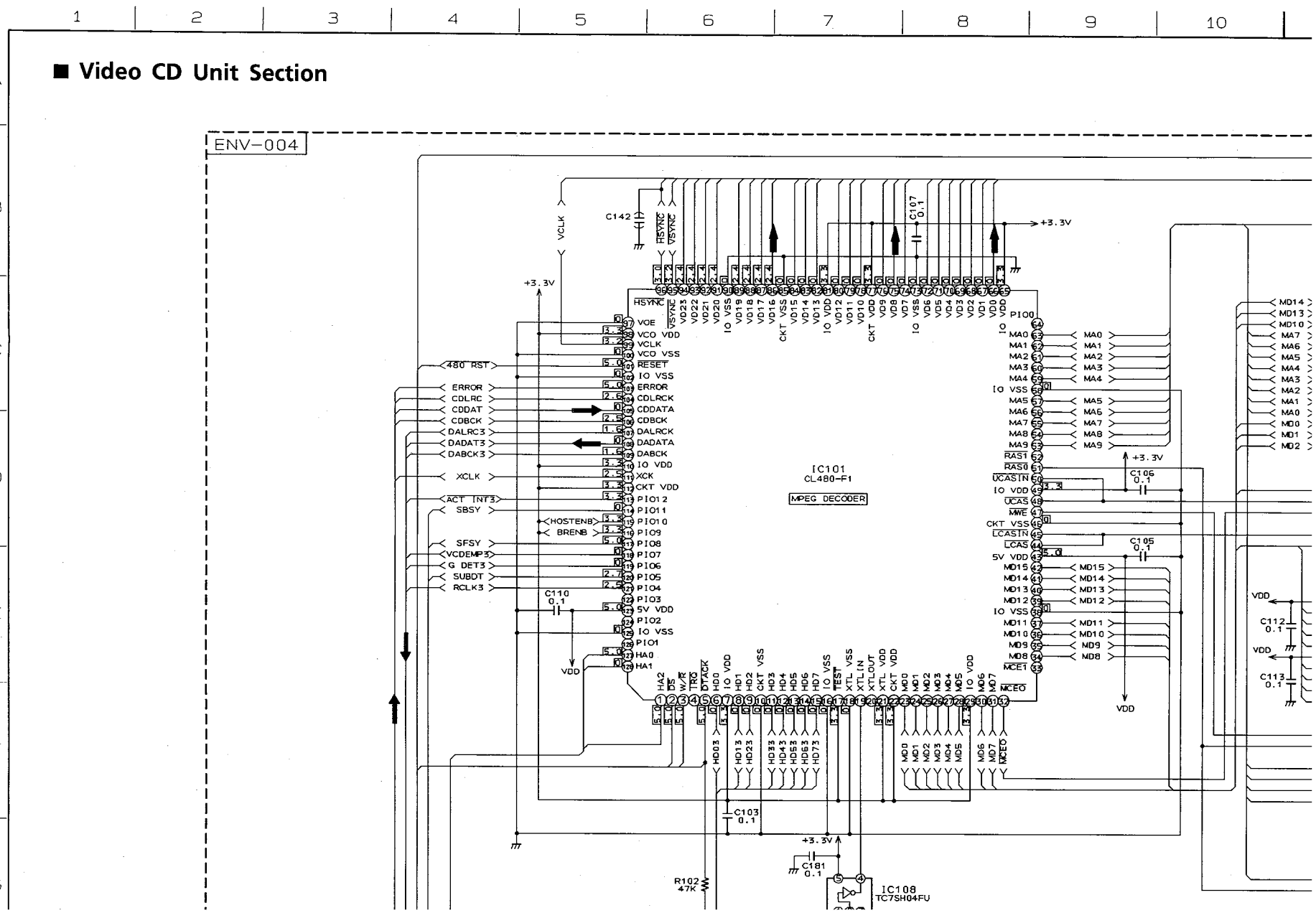
P2-35-a P2-35-b

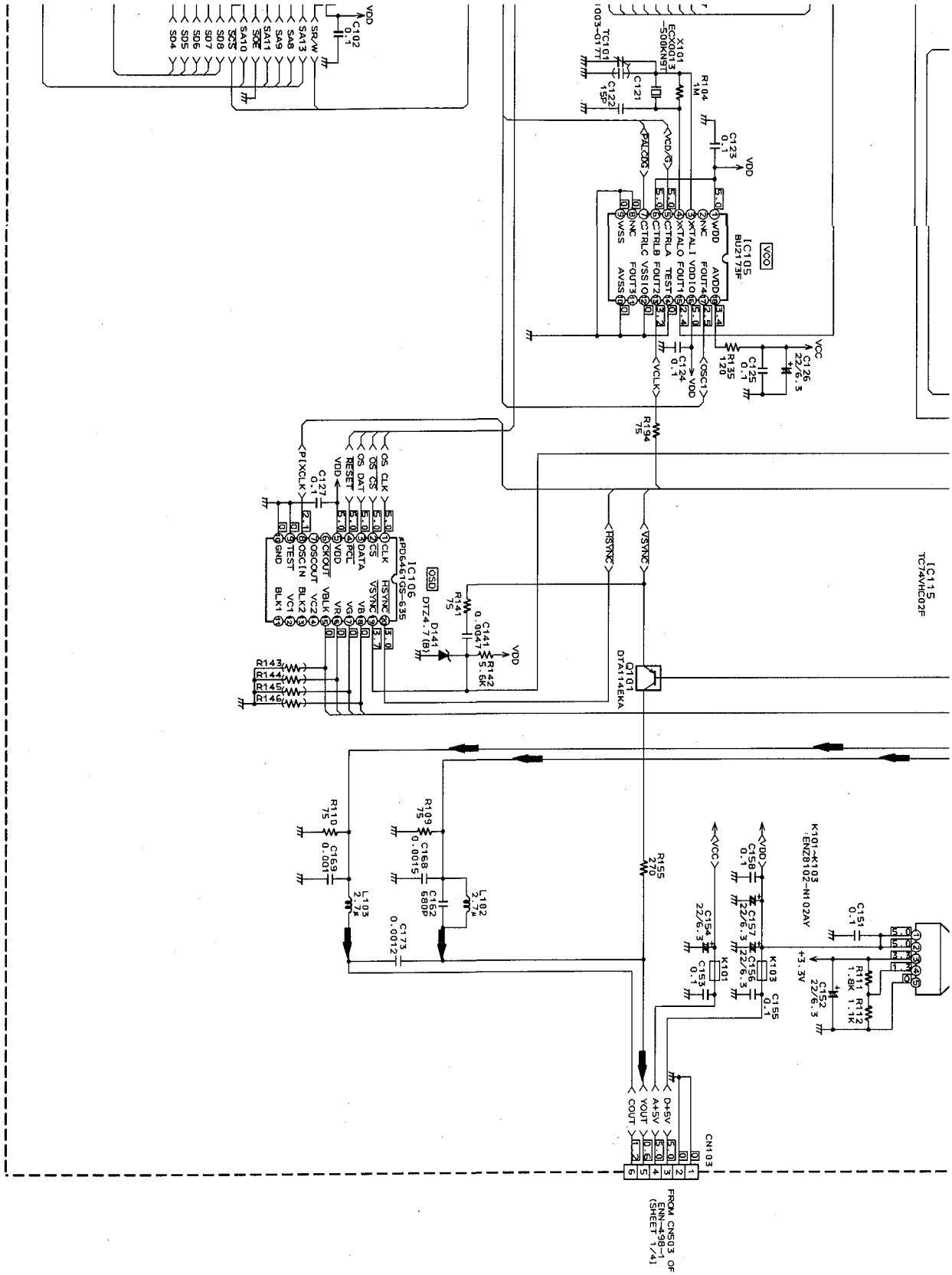


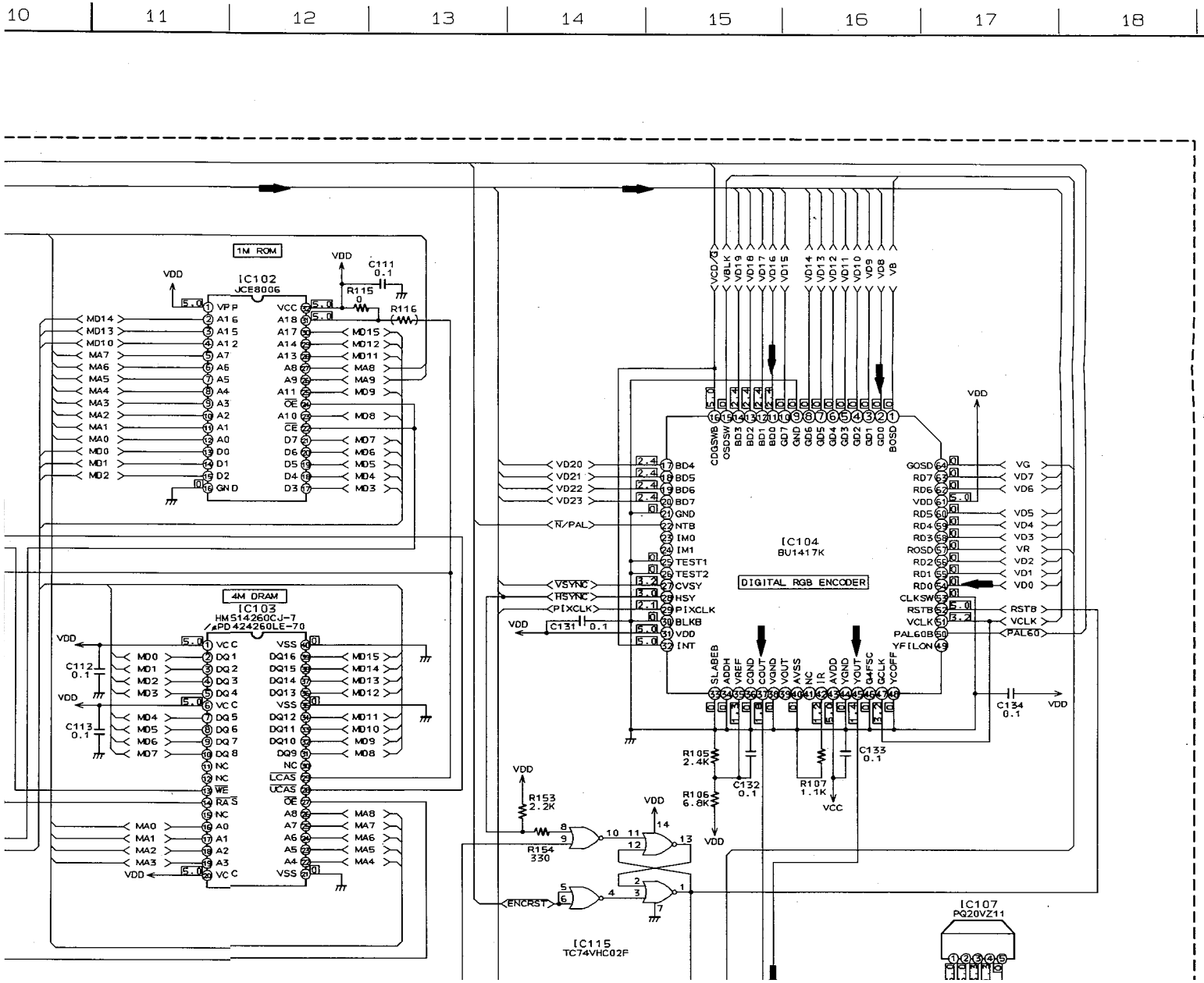
P2-35-c P2-35-d


FROM CN502 OF ENN-498-5 (SHEET 1/4)
FROM CN501 OF ENN-498-1 (SHEET 1/4)
CN102
CN101
IC111
MN171601AK8J2
HOST a-COM
IC113
HD74HCT244FP
IC114
HD74HCT245FP
IC112
TC55257DFL85E
256K SRAM
IC108
TC7SH04FU
X101
ECX-Q13
-500KNST
TC101
ENZ1003-017T
VDD
RESET

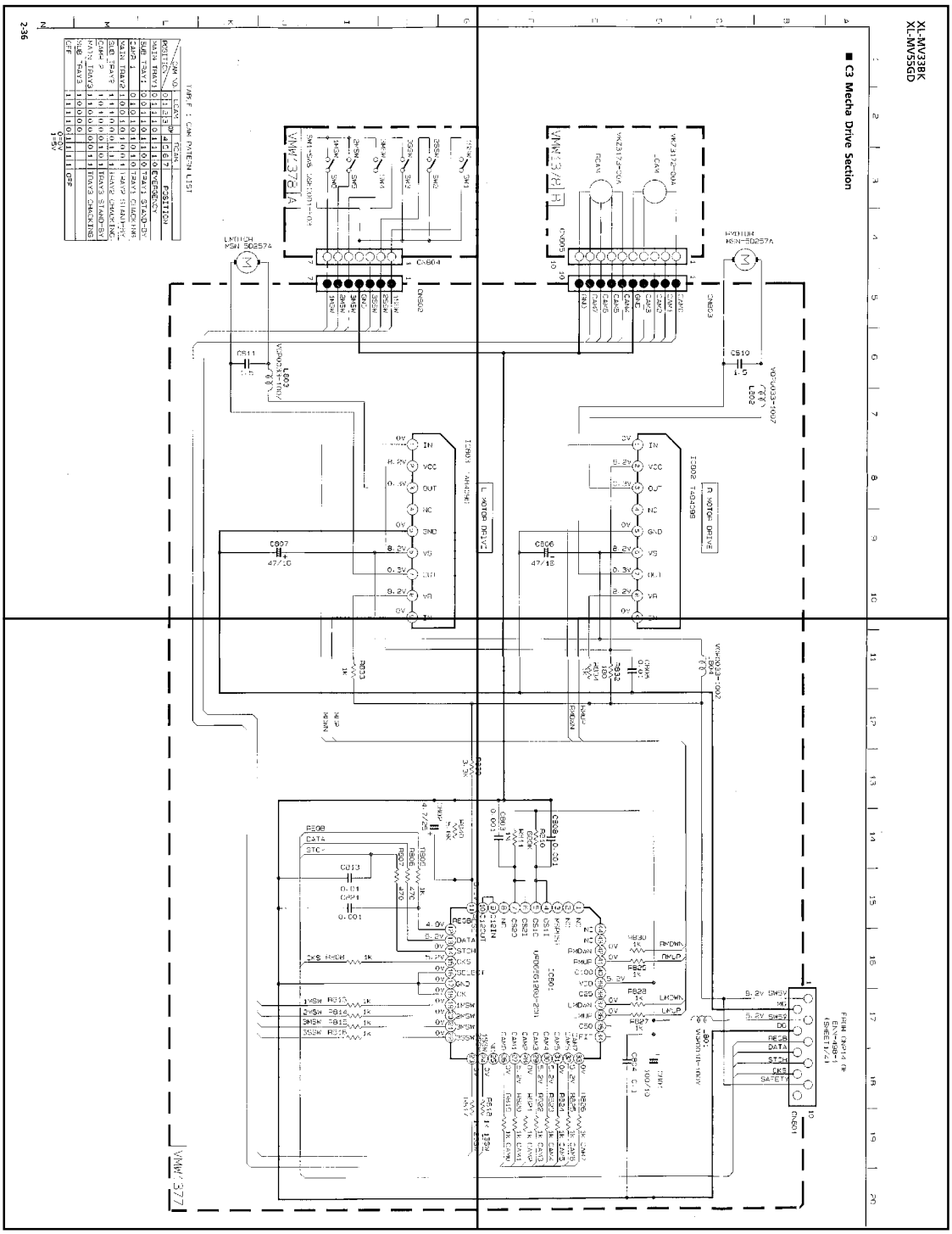
■ Video CD Unit Section




IC115
TC74VHC02F
IC105
BU2173F
VCO
IC105
PD6461GS-E35
Q101
DTA114EKA
D141
DTZ4.7(B)
K101-K103
-ENZB102-N102AY
FROM CN503 OF
ENN-498-1
(SHEET 1/4)


1M ROM
IC102
JCE8006
4M DRAM
IC103
HM514260CJ-7
μPD424260LE-70
IC104
BU1417K
DIGITAL RGB ENCODER
IC115
TC74VHC02F
IC107
PQ20VZ11
VDD
VCC
C111 0.1
R115 0
R116
C131 0.1
C132 0.1
C133 0.1
C134 0.1
C112 0.1
C113 0.1
R105 2.4K
R106 6.8K
R107 1.1K
R153 2.2K
R154 330
ENCRST
N/PAL
VSYNC
HSYNC
PIXCLK
RSTB
VCLK
PAL60

P2-36-a P2-36-b

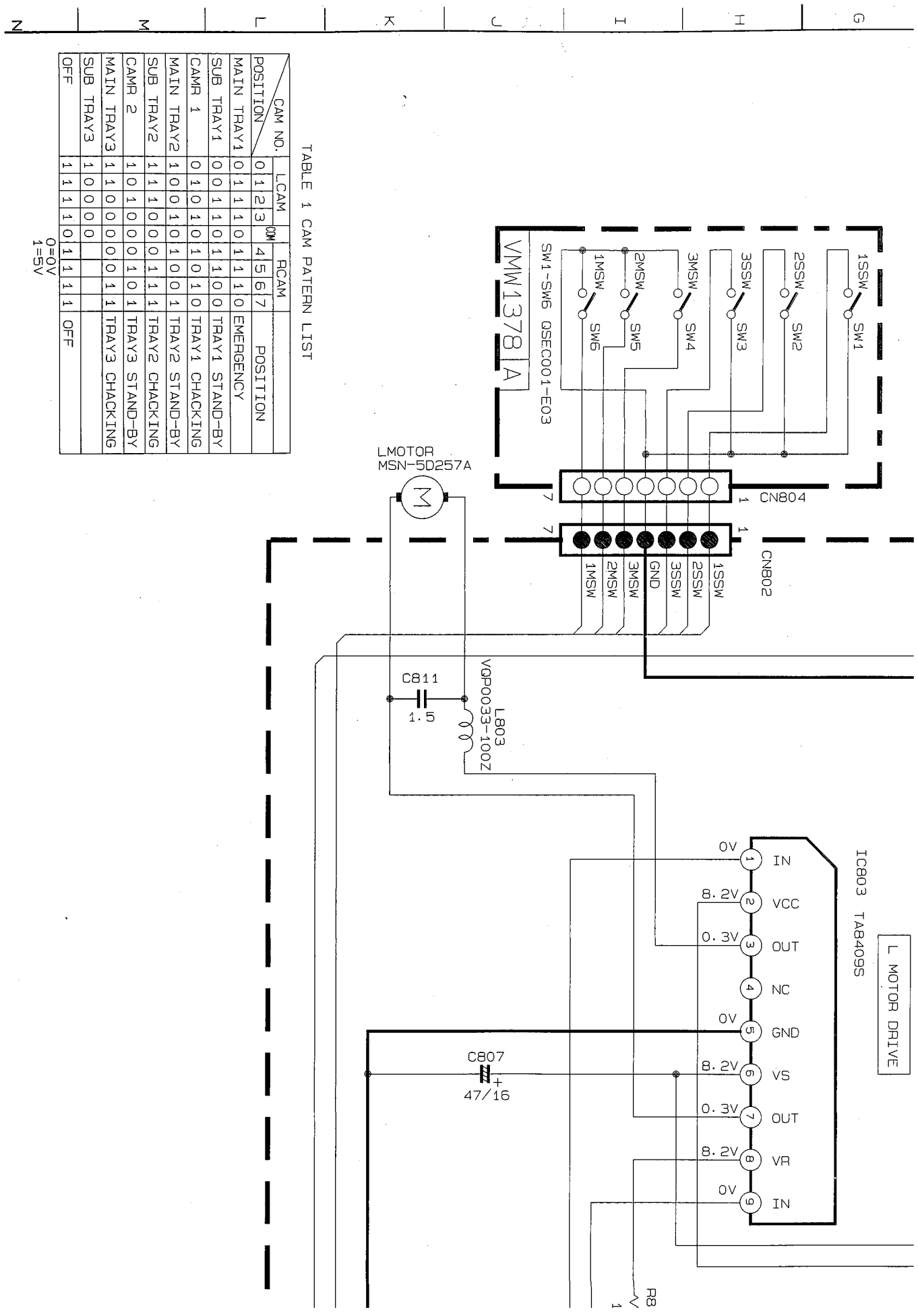


P2-36-c P2-36-d

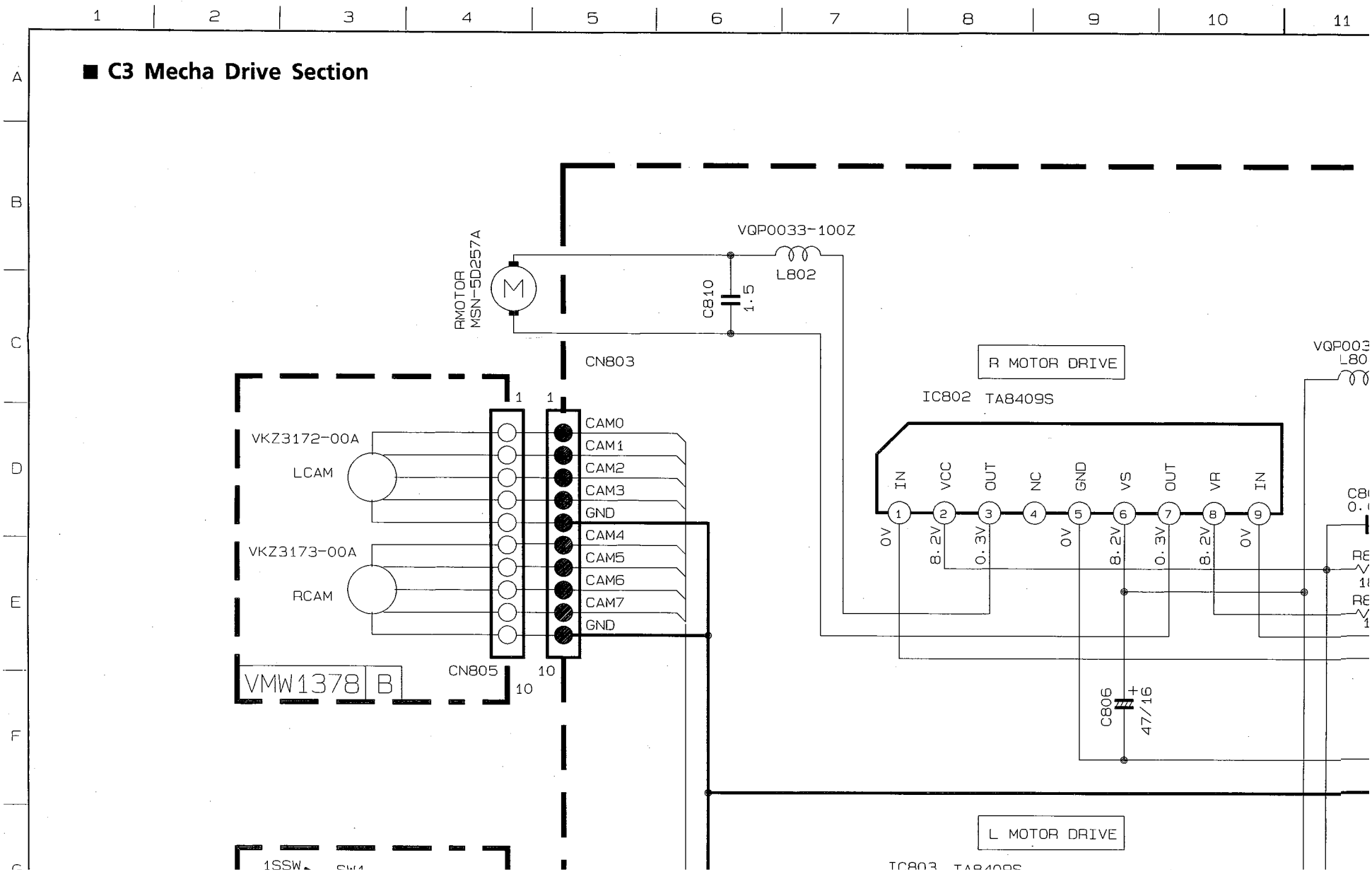
TABLE 1 CAM PATERN LIST

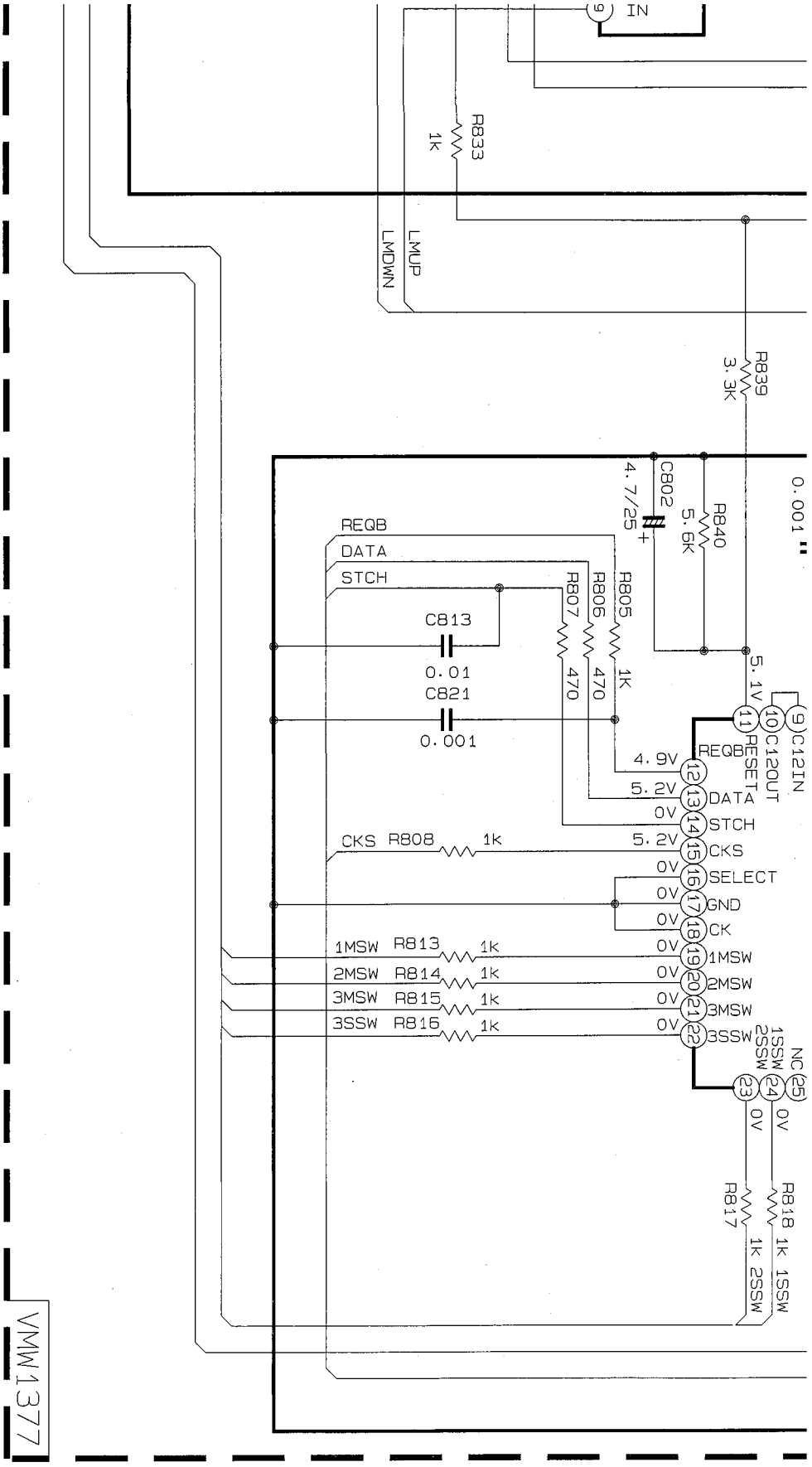
POSITION \ CAM NO.	LCAM 0	LCAM 1	LCAM 2	LCAM 3	COM	RCAM 4	RCAM 5	RCAM 6	RCAM 7	POSITION
MAIN TRAY1	0	1	1	1	0	1	1	1	0	EMERGENCY
SUB TRAY1	0	0	1	1	0	1	1	0	0	TRAY1 STAND-BY
CAMR 1	0	1	0	1	0	1	0	1	0	TRAY1 CHACKING
MAIN TRAY2	1	0	0	1	0	1	0	0	1	TRAY2 STAND-BY
SUB TRAY2	1	1	1	0	0	0	1	1	1	TRAY2 CHACKING
CAMR 2	1	0	1	0	0	0	1	0	1	TRAY3 STAND-BY
MAIN TRAY3	1	1	0	0	0	0	0	1	1	TRAY3 CHACKING
SUB TRAY3	1	0	0	0	0					
OFF	1	1	1	0	1	1	1	1	1	OFF

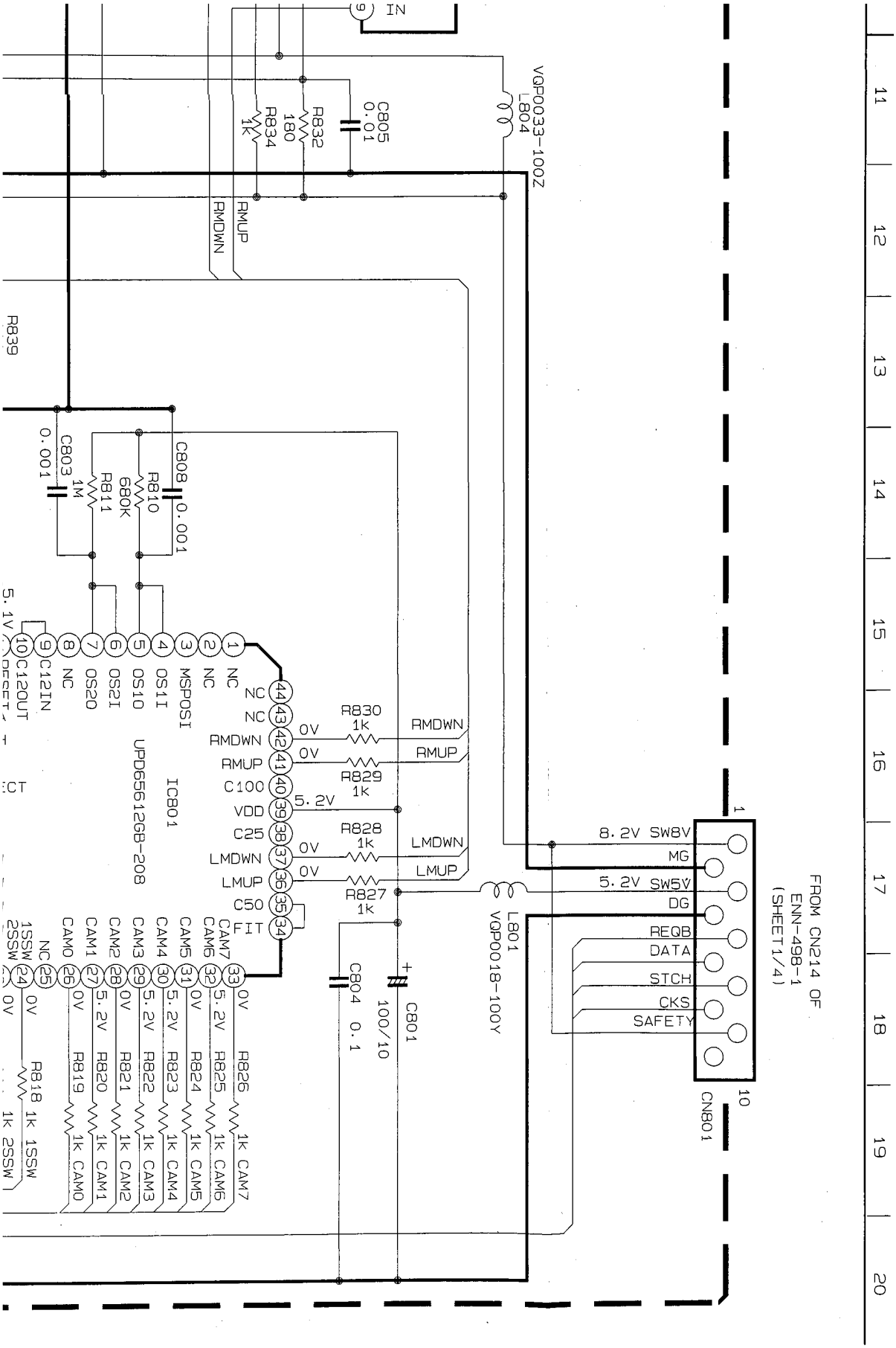
0=0V
1=5V



■ C3 Mecha Drive Section

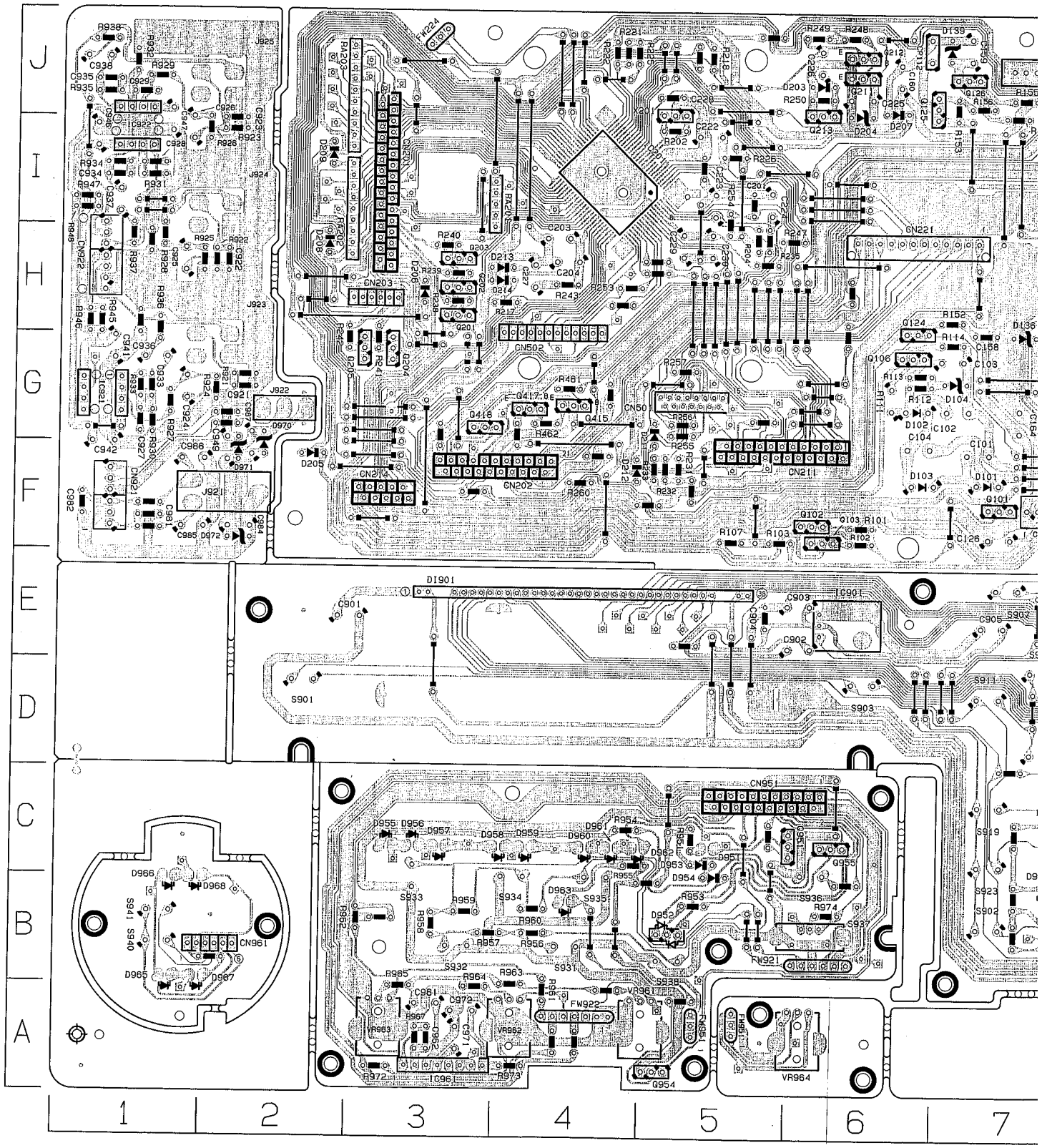


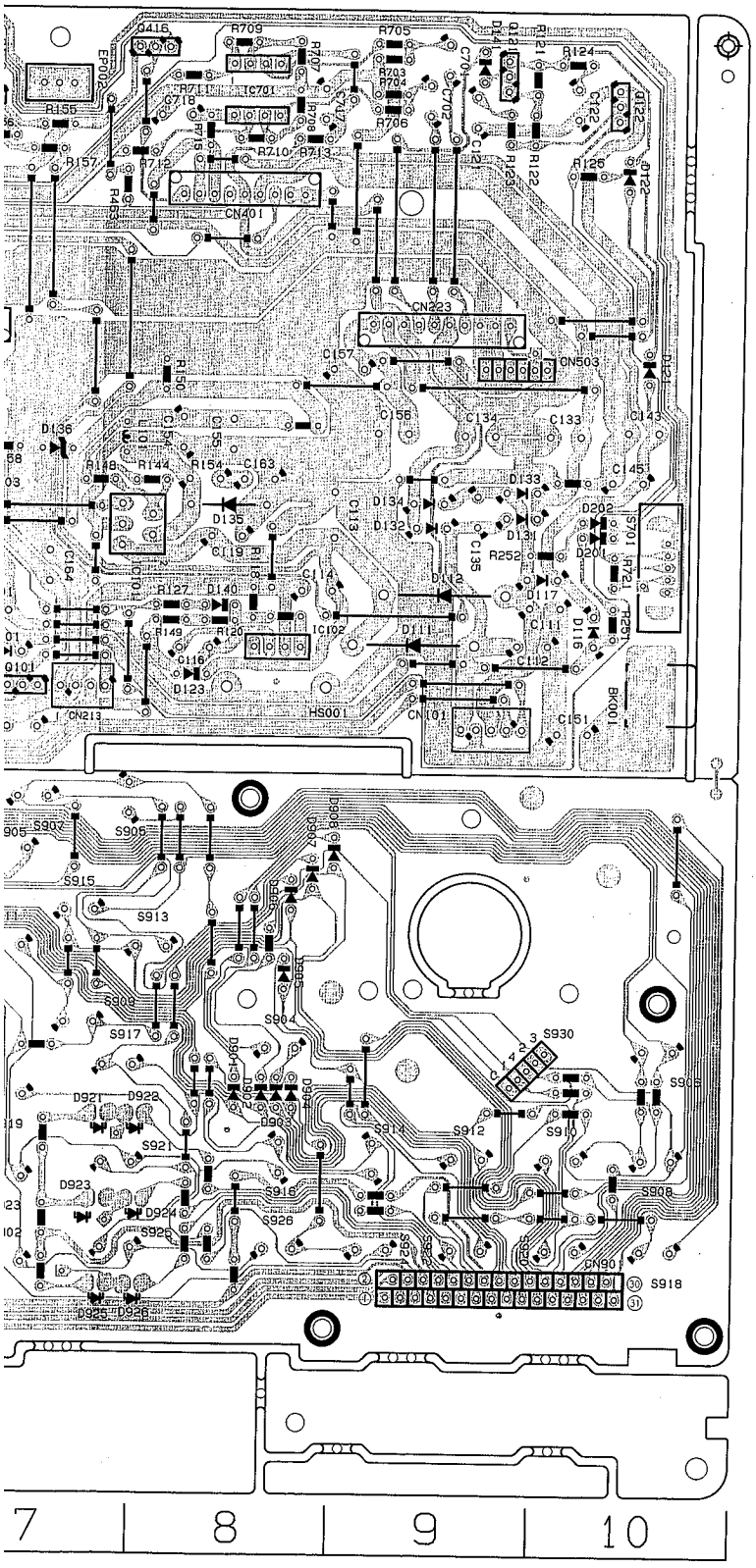

IN
R833
1k
LMUP
LMDWN
R839
3.3K
C802
4.7/25
R840
5.6K
0.001
REQB
DATA
STCH
C813
0.01
C821
0.001
R807
R806
R805
470
470
1K
5.1V
9 C12IN
10 C12OUT
11 RESET
4.9V
REQB
12
5.2V
DATA
13
0V
STCH
14
CKS R808 1k
5.2V
CKS
15
0V
SELECT
16
0V
GND
17
0V
CK
18
1MSW R813 1k
0V
1MSW
19
2MSW R814 1k
0V
2MSW
20
3MSW R815 1k
0V
3MSW
21
3SSW R816 1k
0V
3SSW
22
1SSW
2SSW
NC 25
23
24
0V
0V
R817
1k 2SSW
R818 1k 1SSW
VMW1377


11
12
13
14
15
16
17
18
19
20
IN
VQP0033-100Z
L804
C805
0.01
R832
180
R834
1k
RMDWN
RMUP
R839
C803
0.001
C808
0.001
R810
680K
R811
1M
5.1V
C12IN
C12OUT
NC
OS20
OS2I
OS10
OS1I
MSPOSI
IC801
UPD65612GB-208
C100
VDD
C25
C50
FIT
R830
1k
R829
1k
R828
1k
R827
1k
0V
5.2V
LMDWN
LMUP
C804
0.1
C801
100/10
L801
VQP0018-100Y
CAM7
CAM6
CAM5
CAM4
CAM3
CAM2
CAM1
CAM0
R826
R825
R824
R823
R822
R821
R820
R819
R818
1k
1SSW
2SSW
8.2V SW8V
MG
5.2V SW5V
DG
REQB
DATA
STCH
CKS
SAFETY
CN801
FROM CN214 OF
ENN-498-1
(SHEET1/4)

Printed Circuit Boards

■ System Control, Front & Power Supply P.C. Board (ENN-498)





Location List(ENN-498)

Symbol	X	Y
C101	7	F
C102	7	G
C103	7	G
C104	6	F
C111	9	F
C112	9	F
C113	8	G
C114	8	G
C116	8	F
C119	8	G
C121	9	J
C122	10	J
C126	7	F
C133	10	H
C134	9	H
C135	9	G
C143	10	H
C145	10	G
C151	10	F
C154	8	H
C155	8	H
C156	9	H
C157	8	H
C158	7	H
C159	7	J
C160	6	J
C163	8	G
C164	7	G
C201	5	I
C203	4	H
C204	4	H
C222	5	I
C223	5	I
C224	5	I
C225	6	J
C226	6	J
C227	4	H
C228	5	J
C229	5	H
C230	5	H
C701	9	J
C702	9	J
C717	8	J
C718	8	J
C901	3	E
C902	6	E
C903	6	E
C904	5	E
C905	7	E
C921	2	G
C922	2	H
C923	2	I
C924	1	G
C925	1	H
C926	1	I
C927	1	G
C928	1	I
C929	1	J
C933	1	G
C934	1	I
C935	1	J
C936	1	G
C937	1	I
C938	1	J
C941	1	G
C942	1	F
C946	1	I
C947	1	I
C949	2	F
C961	3	A
C962	3	A

Symbol	X	Y
C971	3	A
C972	3	A
C981	1	F
C982	1	F
C984	2	F
C985	1	F
C986	1	F
C987	2	G
CN101	9	F
CN201	3	J
CN202	3	F
CN203	3	H
CN211	6	F
CN213	7	F
CN214	3	F
CN221	6	H
CN223	9	H
CN401	8	I
CN501	5	G
CN502	3	H
CN503	9	H
CN901	9	B
CN921	1	F
CN922	1	I
CN951	5	C
CN961	2	B
D101	7	F
D102	6	G
D103	6	F
D104	6	G
D111	9	F
D112	9	G
D116	10	F
D117	9	G
D121	10	H
D122	10	I
D123	8	F
D131	9	G
D132	9	G
D133	9	G
D134	9	G
D135	8	G
D136	7	H
D139	6	J
D140	8	F
D141	9	J
D201	10	G
D202	10	G
D203	6	J
D204	6	J
D205	2	F
D206	3	H
D207	6	J
D208	2	H
D209	2	I
D211	5	F
D212	4	F
D213	3	H
D214	3	H
D901	8	C
D902	8	C
D903	8	C
D904	8	C
D905	8	D
D906	8	D
D907	8	E
D908	8	E
D921	7	C
D922	7	C
D923	7	B
D924	7	B

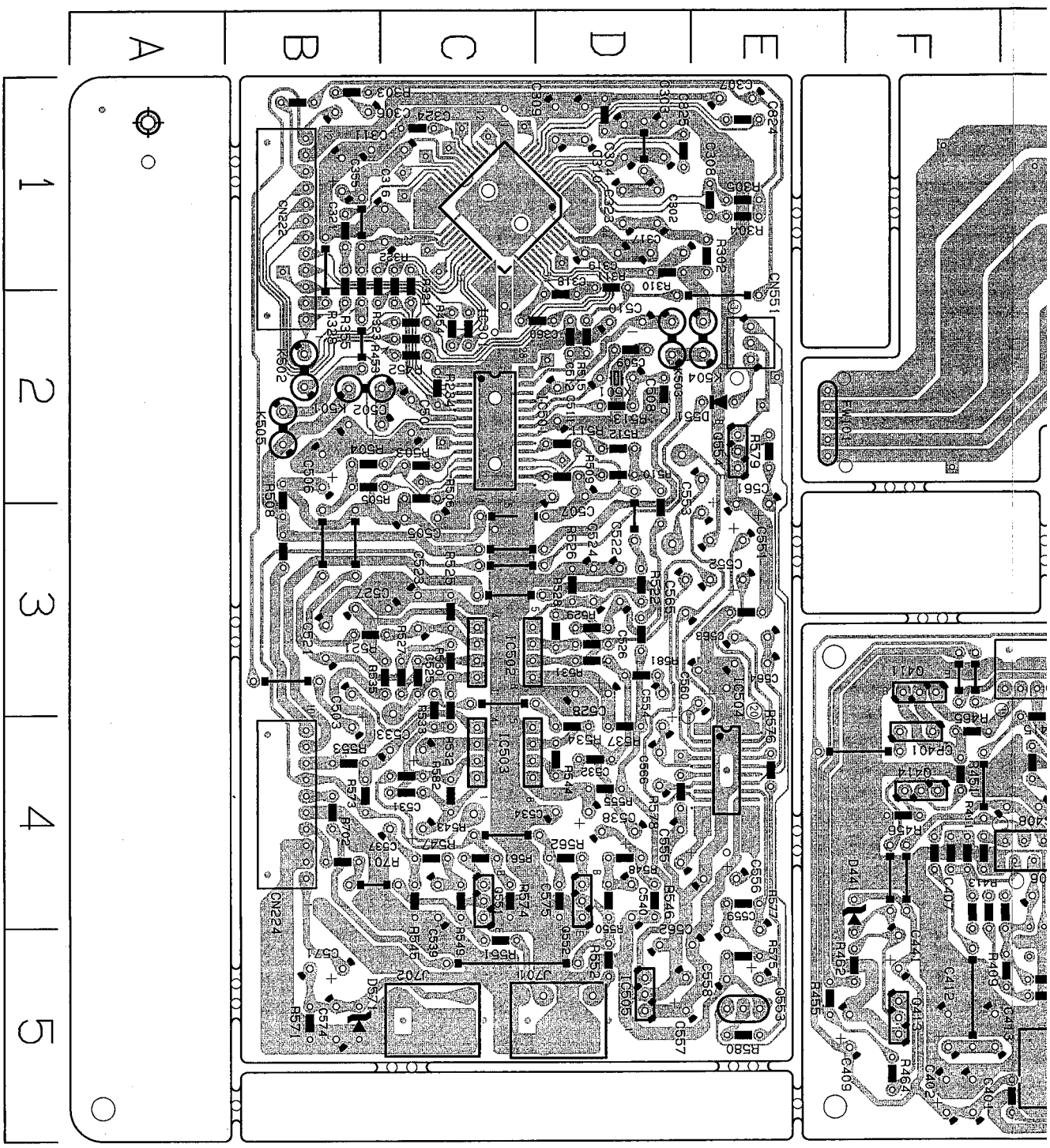
Symbol	X	Y
D925	7	B
D926	7	B
D951	5	C
D952	5	B
D953	5	C
D954	5	C
D955	3	C
D956	3	C
D957	3	C
D958	4	C
D959	4	C
D960	4	C
D961	4	C
D962	4	C
D963	4	B
D965	1	B
D966	1	B
D967	1	B
D968	1	B
D970	2	F
D971	2	F
D972	2	F
D1901	3	E
FW224	3	J
FW921	6	B
FW922	4	A
FW951A	5	A
FW951B	5	A
IC101	7	G
IC102	8	F
IC201	4	I
IC701	8	J
IC901	6	E
IC921	1	G
IC922	1	J
IC961	3	A
J921	2	F
J922	2	G
J923	2	H
J924	2	I
J925	2	J
L101	7	H
Q101	7	F
Q102	6	F
Q103	6	F
Q106	6	G
Q121	9	J
Q122	10	J
Q124	6	H
Q125	6	J
Q126	7	J
Q201	3	H
Q202	3	H
Q203	3	H
Q204	3	G
Q205	3	G
Q211	6	J
Q212	6	J
Q213	6	J
Q415	4	G
Q416	8	J
Q417	4	G
Q418	3	G
Q951	5	C
Q954	5	A
Q955	6	C
R101	6	F
R102	6	F
R103	5	F
R107	5	F
R111	6	G

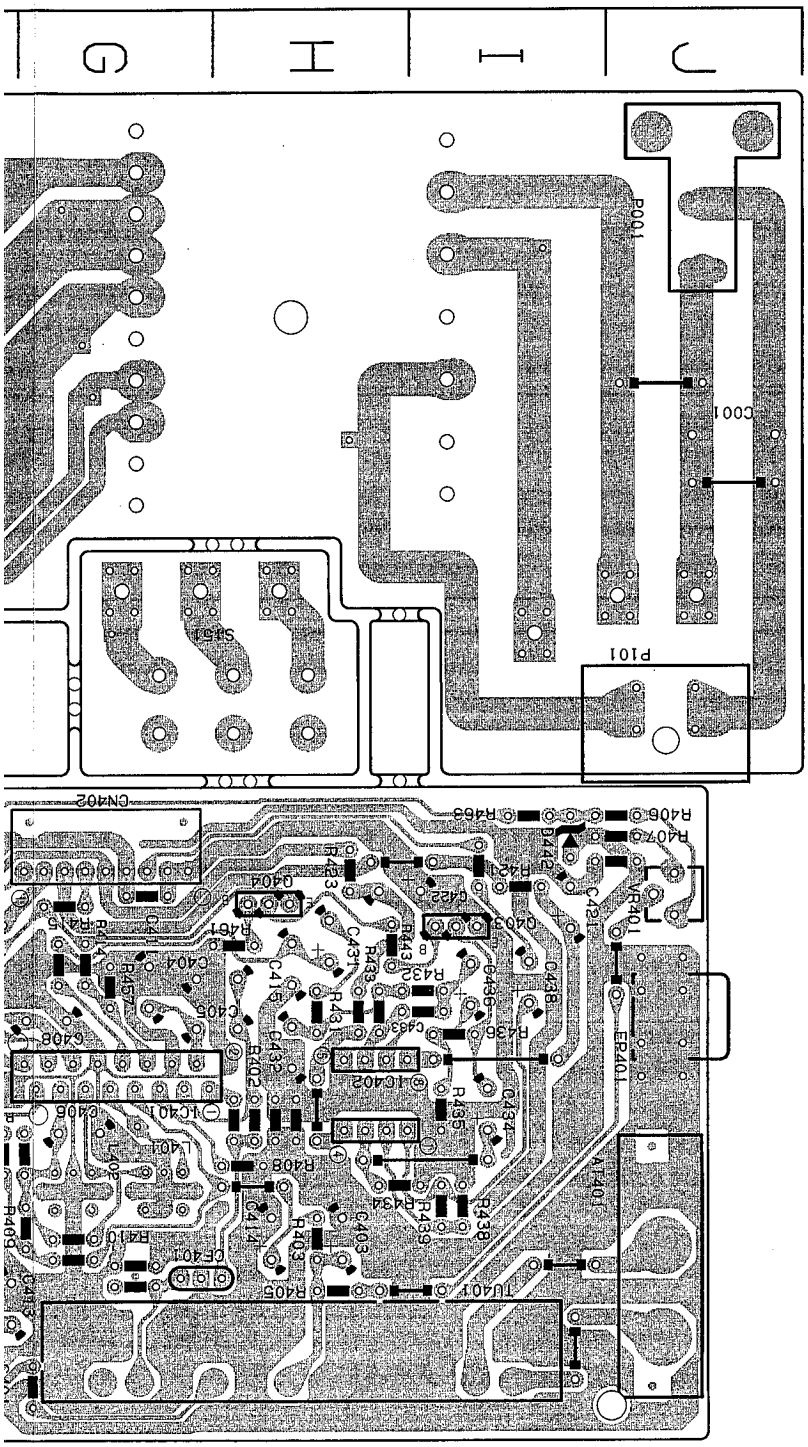
Symbol	X	Y
R112	6	G
R113	6	G
R114	7	G
R118	8	G
R120	8	F
R121	9	J
R122	9	J
R123	9	J
R124	10	J
R125	10	I
R127	8	F
R144	8	G
R148	7	G
R149	8	F
R150	8	H
R152	7	H
R153	7	J
R154	8	G
R155	7	J
R156	7	J
R157	7	J
R202	5	I
R204	5	I
R217	4	H
R218	5	J
R221	4	J
R222	4	J
R225	4	J
R226	5	I
R231	5	F
R232	5	F
R233	5	F
R235	5	I
R238	3	H
R239	3	H
R240	3	H
R241	3	H
R242	2	H
R243	4	H
R247	5	H
R248	6	J
R249	6	J
R250	6	J
R251	10	F
R252	10	G
R253	4	H
R254	5	I
R255	5	G
R256	5	G
R257	5	G
R260	4	F
R461	4	G
R462	4	G
R463	7	I
R703	9	J
R704	9	J
R705	9	J
R706	9	J
R707	8	J
R708	8	J
R709	8	J
R710	8	J
R711	8	J
R712	7	J
R713	8	J
R715	8	J
R721	10	G
R921	2	G
R922	2	H
R923	2	I
R924	2	G

Symbol	X	Y
R925	1	H
R926	1	I
R927	1	G
R928	1	H
R929	1	J
R930	1	G
R931	1	I
R932	1	J
R933	1	G
R934	1	I
R935	1	J
R936	1	G
R937	1	I
R938	1	J
R945	1	H
R946	1	H
R947	1	I
R948	1	I
R951	5	C
R953	5	B
R954	4	C
R955	5	C
R956	4	B
R957	3	B
R958	3	B
R959	3	B
R960	4	B
R961	4	A
R962	3	B
R963	4	B
R964	3	A
R965	3	A
R967	3	A
R972	3	A
R973	4	A
R974	6	B
RA201	3	I
RA202	2	H
RA203	2	I
S701	10	G
S901	2	D
S902	7	B
S903	6	D
S904	8	D
S905	7	E
S906	10	D
S907	7	E
S908	10	C
S909	7	D
S910	10	C
S911	7	D
S912	9	C
S913	8	D
S914	9	C
S915	7	D
S916	8	C
S917	7	C
S918	10	B
S919	7	C
S920	10	B
S921	7	C
S922	9	B
S923	7	C
S924	9	B
S925	7	B
S926	8	B
S930	9	C
S931	4	B
S932	3	B
S933	3	B
S934	4	C

Symbol	X	Y
S935	4	C
S936	6	C
S937	6	B
S938	5	B
S940	1	B
S941	1	B
X201	5	J

■ AUDIO/VIDEO , Wireless tuner & Power supply P.C. Board (ENN-499)





Location List(ENN-499)

Symbol	X	Y
C001	2	J
C302	1	D
C303	1	D
C304	1	D
C306	1	B
C307	1	E
C308	1	E
C309	1	D
C310	1	D
C311	1	B
C316	1	C
C317	1	D
C318	2	D
C319	1	D
C321	1	B
C323	1	D
C324	1	C
C355	1	B
C360	2	D
C401	5	F
C402	5	F
C403	5	H
C404	4	H
C405	4	H
C406	4	G
C407	4	F
C408	4	G
C409	5	F
C411	4	G
C412	5	F
C413	5	F
C414	5	H
C415	4	H
C421	4	I
C422	3	I
C431	4	H
C432	4	H
C433	4	I
C434	4	I
C436	4	I
C438	4	I
C441	5	F
C501	2	C
C502	2	C
C503	4	B
C505	3	C
C506	2	B
C507	2	D
C508	2	D
C509	2	D
C510	2	D
C511	2	D
C512	2	D
C521	3	B
C522	3	D
C523	3	C
C524	3	D
C525	3	C
C526	3	D
C527	3	C
C528	3	D
C531	4	C
C532	4	D
C533	4	C
C534	4	D
C537	4	C
C538	4	D
C539	4	C
C540	4	D
C551	3	E
C552	3	E

Symbol	X	Y
C553	3	E
C554	4	D
C555	4	D
C556	4	E
C557	5	D
C558	5	E
C559	5	E
C560	3	E
C561	3	E
C562	5	E
C563	3	E
C564	3	E
C565	3	D
C566	4	D
C571	5	B
C574	5	B
C575	4	D
C824	1	E
C825	1	D
CF401	5	H
CN222	1	B
CN224	4	B
CN402	3	G
CN551	2	E
D441	5	F
D442	3	I
D551	2	E
D571	5	B
FW101	2	E
IC301	1	C
IC401	4	G
IC402	4	H
IC501	2	C
IC502	3	C
IC503	4	C
IC504	4	E
IC505	5	D
J701	5	D
J702	5	C
JP050B	2	F
JP050B	3	H
JP050B	3	G
JP050B	2	H
JP050B	3	G
JP050B	1	F
K501	2	B
K502	2	B
K503	2	D
K504	2	E
K505	2	B
L401	5	G
L402	5	G
P001	1	J
P101	3	J
Q403	4	I
Q404	4	H
Q411	3	F
Q413	5	F
Q414	4	F
Q551	4	C
Q552	4	D
Q553	5	E
Q554	2	E
R234	2	C
R302	1	E
R303	1	B
R304	1	E
R305	1	E
R310	1	D
R311	1	D
R321	1	C

Symbol	X	Y
R322	1	C
R323	1	B
R328	1	B
R355	2	B
R402	4	H
R403	5	H
R405	5	H
R406	3	J
R407	3	I
R408	4	H
R409	5	G
R410	5	G
R411	4	F
R413	4	F
R414	4	G
R415	4	G
R421	3	I
R423	3	H
R431	4	H
R432	4	I
R433	4	H
R434	5	I
R435	4	I
R436	4	I
R438	5	I
R439	5	I
R443	4	H
R451	4	F
R452	2	C
R453	2	C
R454	2	C
R455	5	E
R456	4	F
R457	4	G
R461	4	G
R462	5	F
R463	3	I
R464	5	F
R465	4	F
R503	2	C
R504	2	B
R505	2	B
R506	2	C
R508	2	B
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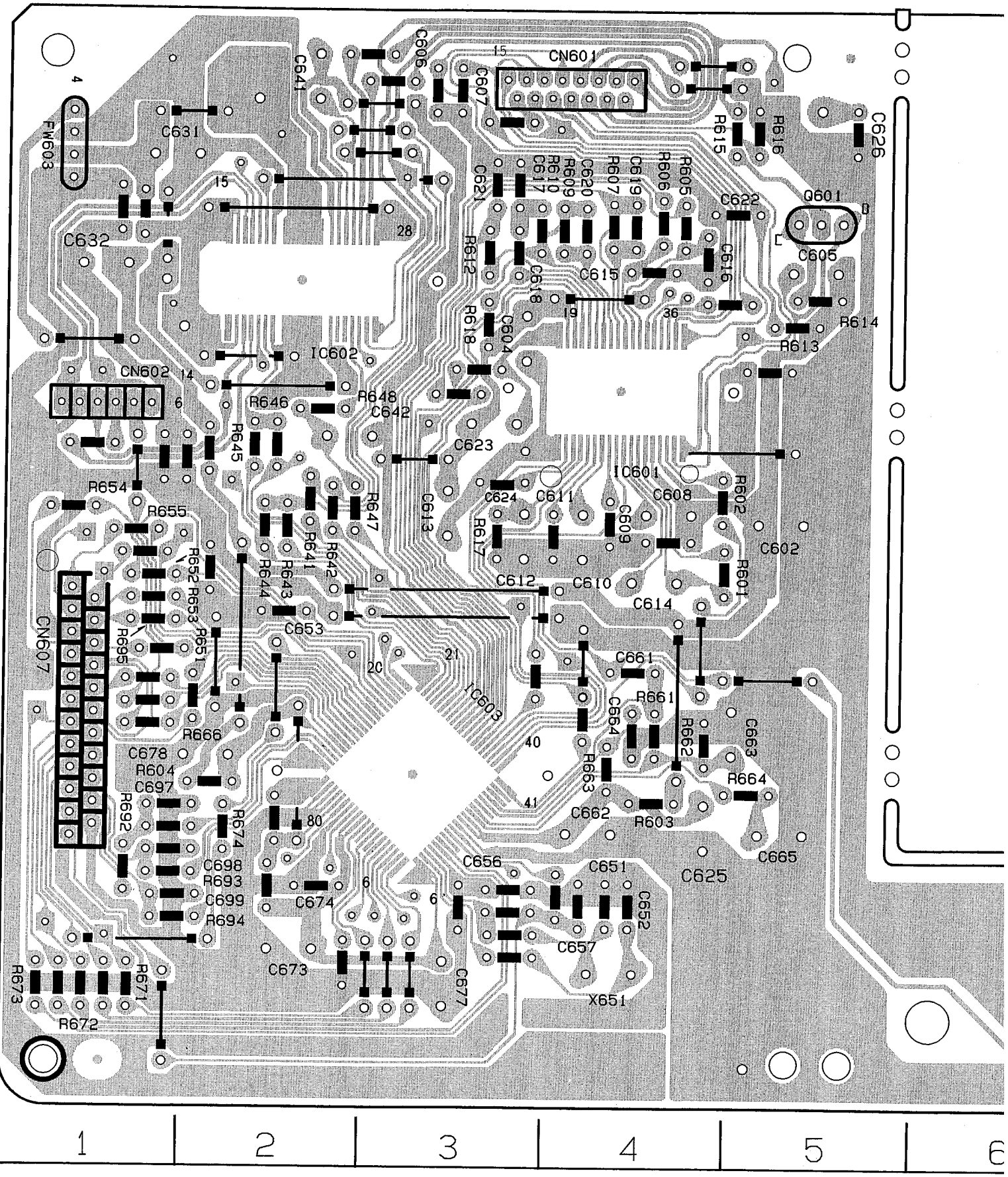
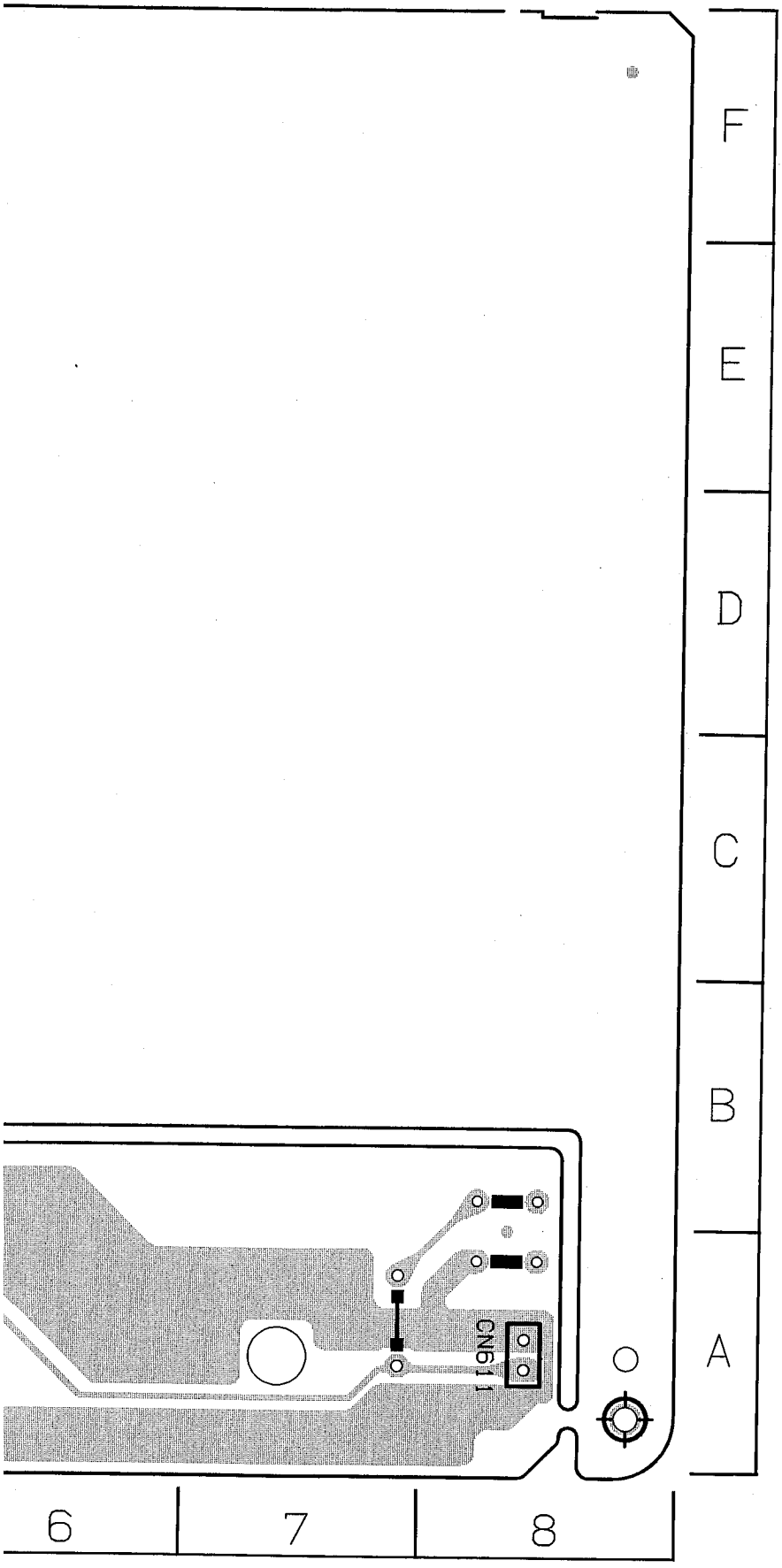
R530	3	C
R531	3	D
R532	3	C
R533	4	C
R534	4	D
R535	3	G
R537	4	D
R543	4	C
R544	4	D
R545	4	C
R546	4	D
R547	4	C
R548	4	D
R549	4	C

Symbol	X	Y
R550	4	D
R551	5	C
R552	5	D
R553	4	B
R555	4	D
R561	4	C
R562	4	D
R571	5	B
R573	4	B
R574	4	C
R575	5	E
R576	4	E
R577	4	E
R578	4	D
R579	2	E
R580	5	E
R581	3	D
R582	4	C
R701	4	B
R702	4	B
S151	3	G
TU401	5	I
X501	2	D

■ CD Servo P.C. Board (ENN-487)



1 2 3 4 5 6

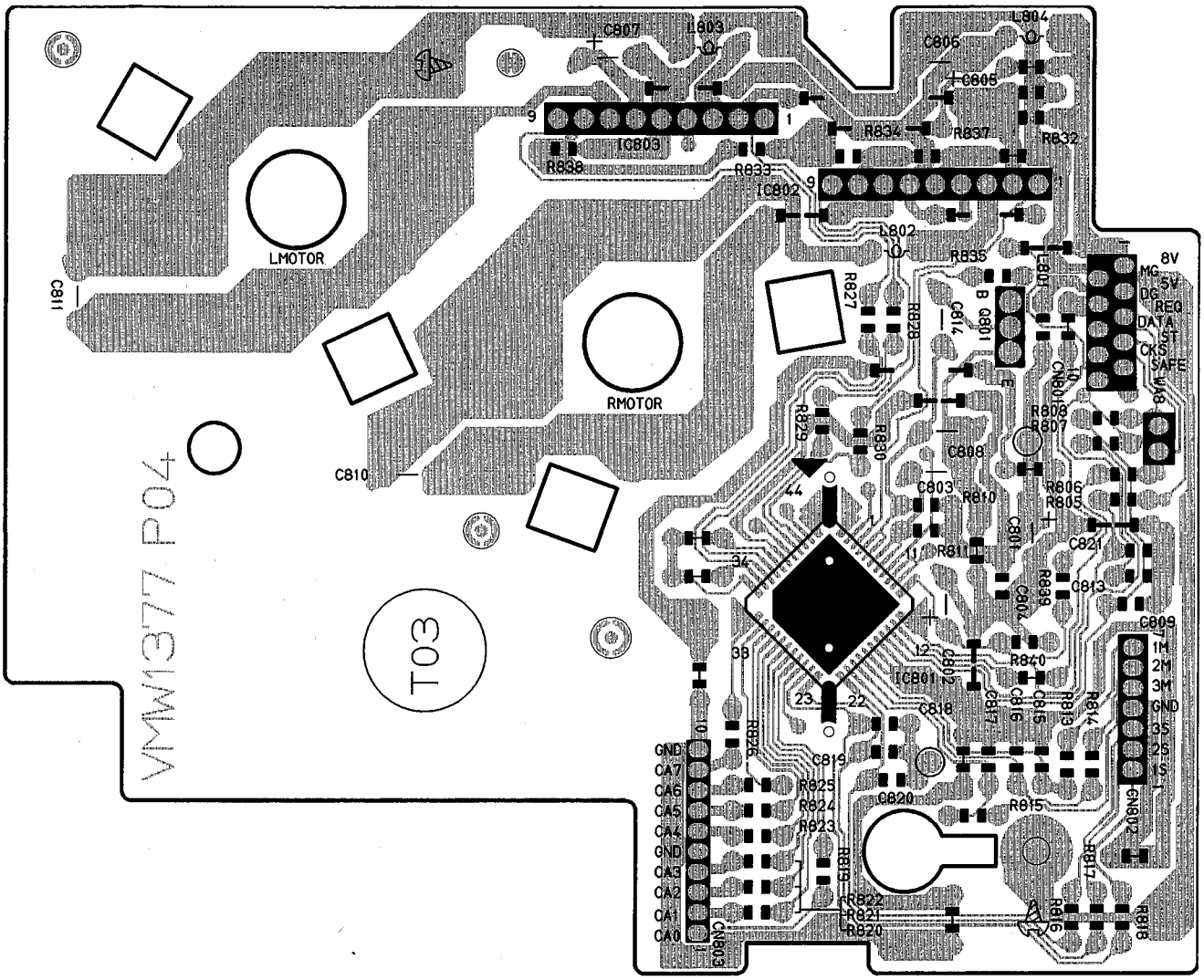


Location List(ENN-487)

Symbol	X	Y
C602	4	C
C604	3	D
C605	5	E
C606	3	F
C607	3	F
C608	4	C
C609	4	D
C610	3	C
C611	3	C
C612	3	C
C613	3	C
C614	4	C
C615	4	E
C616	4	E
C617	3	E
C618	3	E
C619	4	E
C620	3	E
C621	3	E
C622	4	E
C623	3	D
C624	3	D
C625	4	B
C626	5	E
C631	1	E
C632	1	E
C641	2	F
C642	2	D
C651	4	B
C652	4	B
C653	2	C
C656	3	A
C657	3	B
C661	4	C
C662	3	B
C663	4	B
C664	4	B
C665	5	B
C673	2	A
C674	2	B
C677	3	A
C678	1	B
C697	1	B
C698	1	B
C699	1	B
CN601	4	F
CN602	1	D
CN607	1	B
CN611	7	A
FW603	1	E
IC601	4	D
IC602	2	E
IC603	3	B
P01	1	D
P02	2	F
P06	4	A
Q601	5	E
R601	4	C
R602	4	D
R603	4	B
R604	1	B
R605	4	E
R606	4	E
R607	4	E
R609	3	E
R610	3	E
R612	3	E
R613	4	D
R614	5	E
R615	4	F
R616	4	F
R617	3	C
R618	3	E
R641	2	D

Symbol	X	Y
R642	2	D
R643	2	D
R644	2	D
R645	2	D
R646	2	D
R647	2	D
R648	2	D
R651	1	C
R652	1	C
R653	1	C
R654	1	C
R655	1	C
R661	4	B
R662	4	B
R663	4	B
R664	4	B
R666	1	B
R671	1	A
R672	1	A
R673	1	A
R674	2	B
R692	1	B
R693	1	B
R694	1	A
R695	1	C
TW601	5	F
X651	4	A

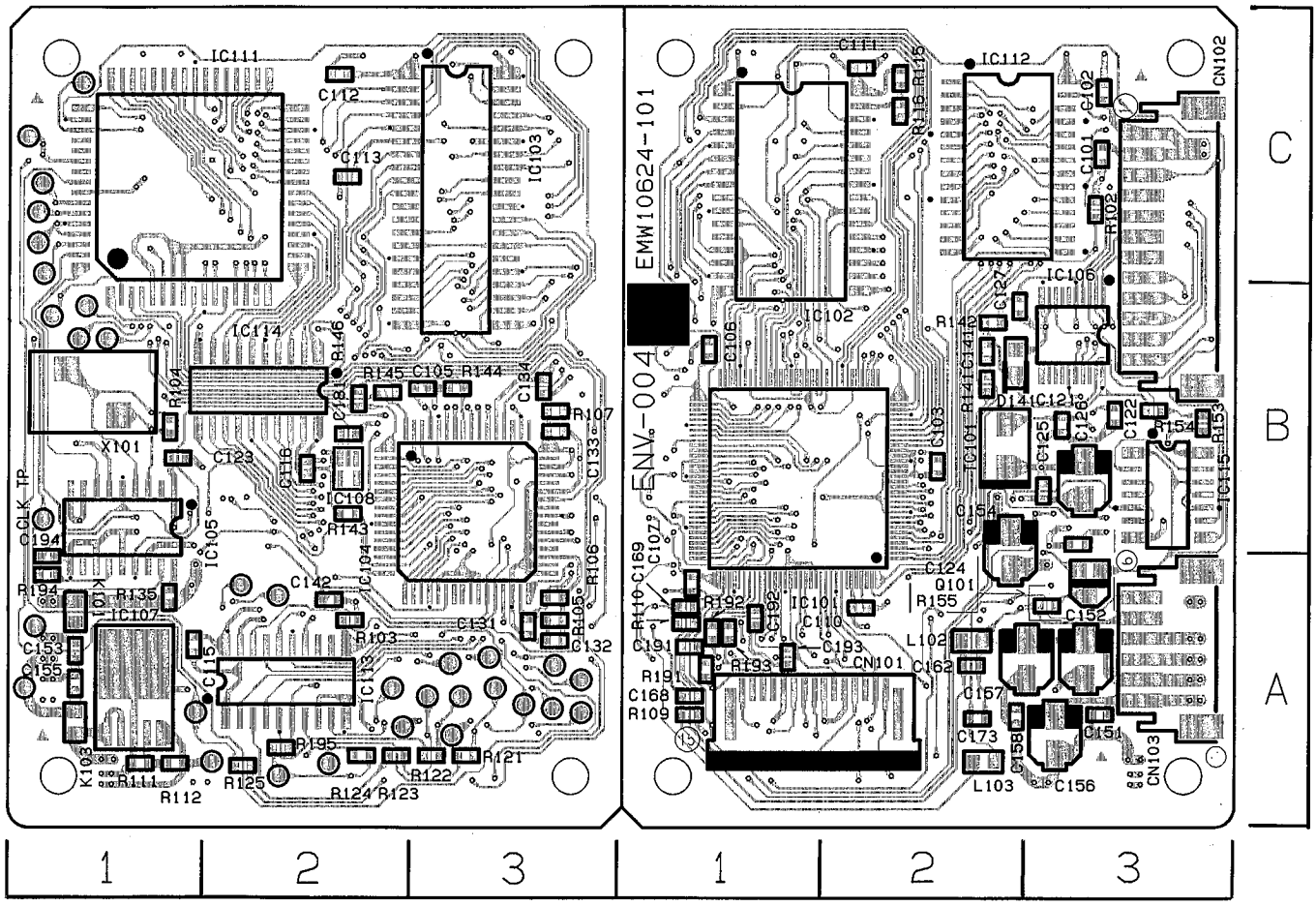
■ C3 Mecha. Drive P.C. Board



■ Video CD Unit P.C. Board (ENV-004)

Bottom Side

Top Side



Location List (ENV-004) Bottom Side

Symbol	X	Y
C105	2	B
C112	2	C
C113	2	C
C116	2	B
C123	1	B
C131	3	A
C132	3	A
C133	3	B
C142	2	A
C153	1	A
C155	1	A
C181	2	B
C194	1	A
IC103	3	C
IC104	3	B
IC105	1	A
IC108	2	B
IC111	1	C
IC114	2	B
K101	1	A
K103	1	A
R103	2	A
R104	1	B
R105	3	A
R106	3	A
R107	3	B
R111	1	A
R112	1	A
R121	3	A
R122	2	A

Symbol	X	Y
R123	2	A
R124	2	A
R125	2	A
R135	1	A
R143	2	B
R144	3	B
R145	2	B
R146	2	B
R194	1	A
R195	2	A
X101	1	B

Location List (ENV-004) Top Side

Symbol	X	Y
C101	3	C
C102	3	C
C103	2	B
C106	1	B
C107	1	A
C110	2	A
C111	2	C
C115	3	A
C121	3	B
C122	3	B
C124	3	A
C125	3	B
C126	3	B
C127	3	B
C134	1	B
C141	2	B
C151	3	A
C152	3	A
C154	2	A
C156	3	A
C157	3	A
C158	3	A
C162	2	A
C168	1	A
C169	1	A
C173	2	A
C191	1	A
C192	1	A
C193	1	A
CN101	1	A

Symbol	X	Y
CN102	3	B
CN103	3	A
D141	3	B
IC101	2	B
IC102	1	C
IC106	3	B
IC107	3	A
IC112	2	C
IC113	2	A
IC115	3	B
L102	2	A
L103	2	A
Q101	3	A
R102	3	C
R109	1	A
R110	1	A
R115	2	C
R116	2	C
R141	2	B
R142	2	B
R153	3	B
R154	3	B
R155	3	A
R191	1	A
R192	1	A
R193	1	A
TC101	2	B

PARTS LIST
< XL-MV55GD >

* All printed circuit boards and its assemblies are not available as service parts.

The Marks for Designated Areas
U --- Universal Type
UB --- Hong Kong
UF --- China
UT --- Taiwan
No mark indicates all areas.

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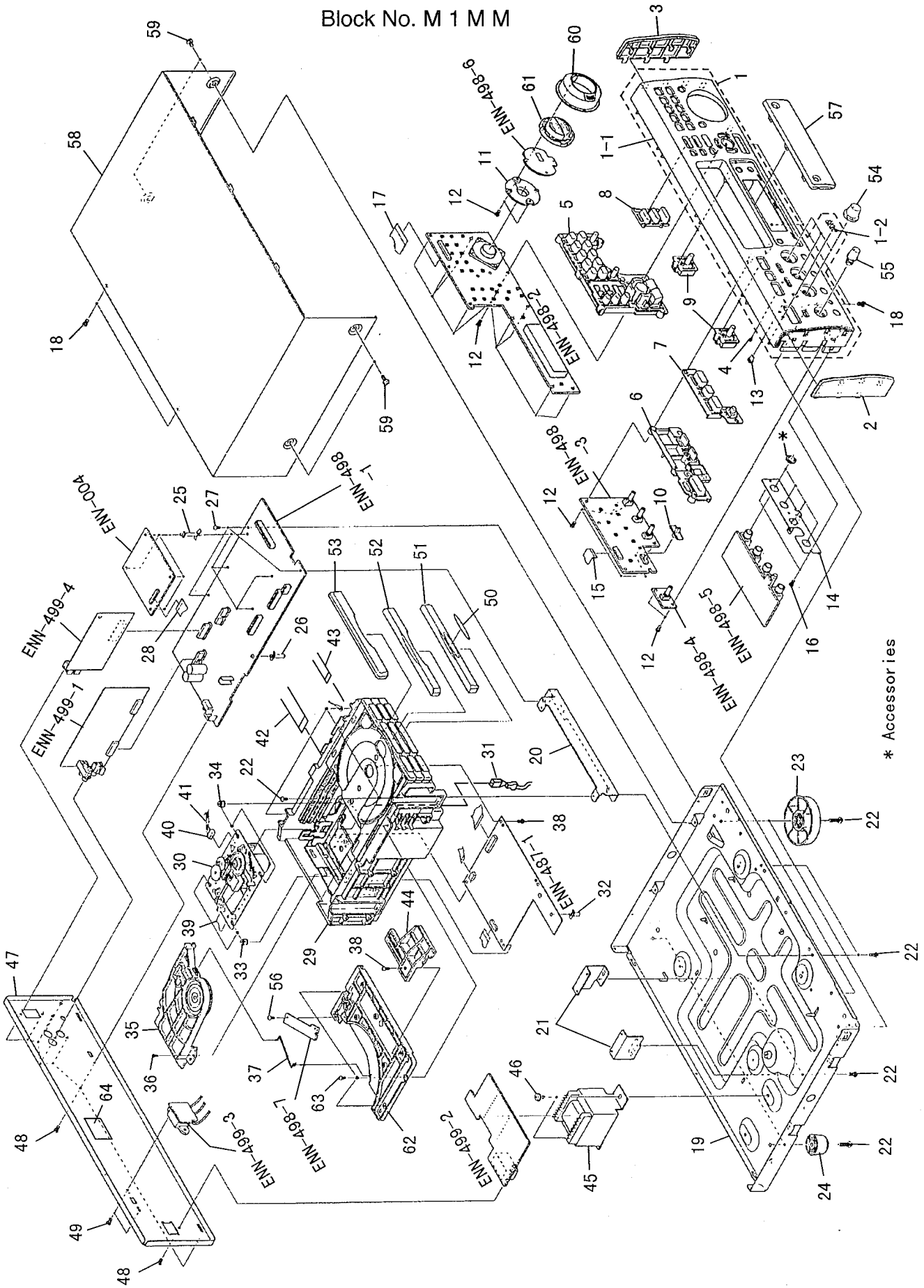
General Exploded View and Parts List

Block No. M 1 M M



■ Parts List

Block No. M 1 M M

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	EFP-XLMV55GDU(S	FRONT PANEL ASSY	1		
	1-1	E103240-007SM	FRONT PANEL	1		
	1-2	VJD5429-001	JVC MARK	1		
	2	E209077-002SM	SIDE FITTING	1		
	3	E209078-002SM	SIDE FITTING	1		
	4	E406686-001SM	INDICATOR LENS	1	AUX	
	5	E103242-002SM	PUSH BUTTON	1	10KEY	
	6	LE20217-002A	PUSH BUTTON	1	POWER	
	7	LE20219-002A	PUSH BUTTON	1	KEY CON.	
	8	E309760-002	PUSH BUTTON	1	DISC	
	9	LE30472-001A	PUSH BUTTON	2	V. INT, B. DIGEST	
	10	E75563-008SM	SLIDE KNOB	1		
	11	LE20221-002A	SHUTTLE BASE	1		
	12	SDSF2608Z	SCREW	19		
	13	FSJD4001-002	INDICATOR LENS	1		
	14	E309766-002ST	MIC BKT	1		
	15	VWF1221-45TTB	FFC CABLE	1		
	16	SDSF2606M	TAPPING SCREW	2		
	17	VWF1231-14PPB	FFC CABLE	1		
	18	SBSG3008N	TAPPING SCREW	5		
	19	E103006-004SM	CHASSIS BASE	1		
	20	E309769-002ST	MECHA. BKT FRONT	1		
	21	E309770-001ST	MECHA. BKT REAR	2		
	22	SBST3008Z	TAPPING SCREW	12		
	23	VJF4039-00MSM	FOOT ASSY	2		
	24	E47227-036	FOOT	2		
	25	E300167-002	FASTENER	4		
	26	E310244-002	FASTENER	1		
	27	GBSG3008CC	TAPPING SCREW	3		
	28	VWF1015-06TTA	FLAT WIRE	1		
	29	----------	CD CHANGER MECHANSIM ASSY	1		
	30	----------	CD MECHANISM ASS'Y	1		
	31	EWPZ01-013	FLAT WIRE	1		
	32	E310244-001	FASTENER	1		
	33	FMYH4003-001	INSULATOR	2		
	34	FMYH4003-002	INSULATOR	2		
	35	VKS3703-00FMM	CLAMPER	1		
	36	SPST2606Z	TAPPING SCREW	1		
	37	VKW5187-001	ROD	1		
	38	SBSF3008Z	TAPPING SCREW	2		
	39	QUQ110-1509AJ	FLAT WIRE	1		
	40	VDM1001-M001A	SOCKET WIRE ASSY	1		
	41	VYSA1R2-033	SPACER	1		
	42	VWF1223-14TTB	FLAT WIRE	1	CN607	
	43	VWF1210-08TTB	FLAT WIRE	1	CN801	
	44	E309662-001	DISC STOPPER	1		
⚠	45	QQT0173-001	POWER TRANSFORMER	1		
	46	E65389-004	SPECIAL SCREW	2		
	47	LE20256-005AKP	REAR PANEL	1		
	48	E73273-003	SPECIAL SCREW	9		
	49	SBSF2608M	TAPPING SCREW	2		
	50	LE30473-001A	MARK PLATE	1		

■ Parts List

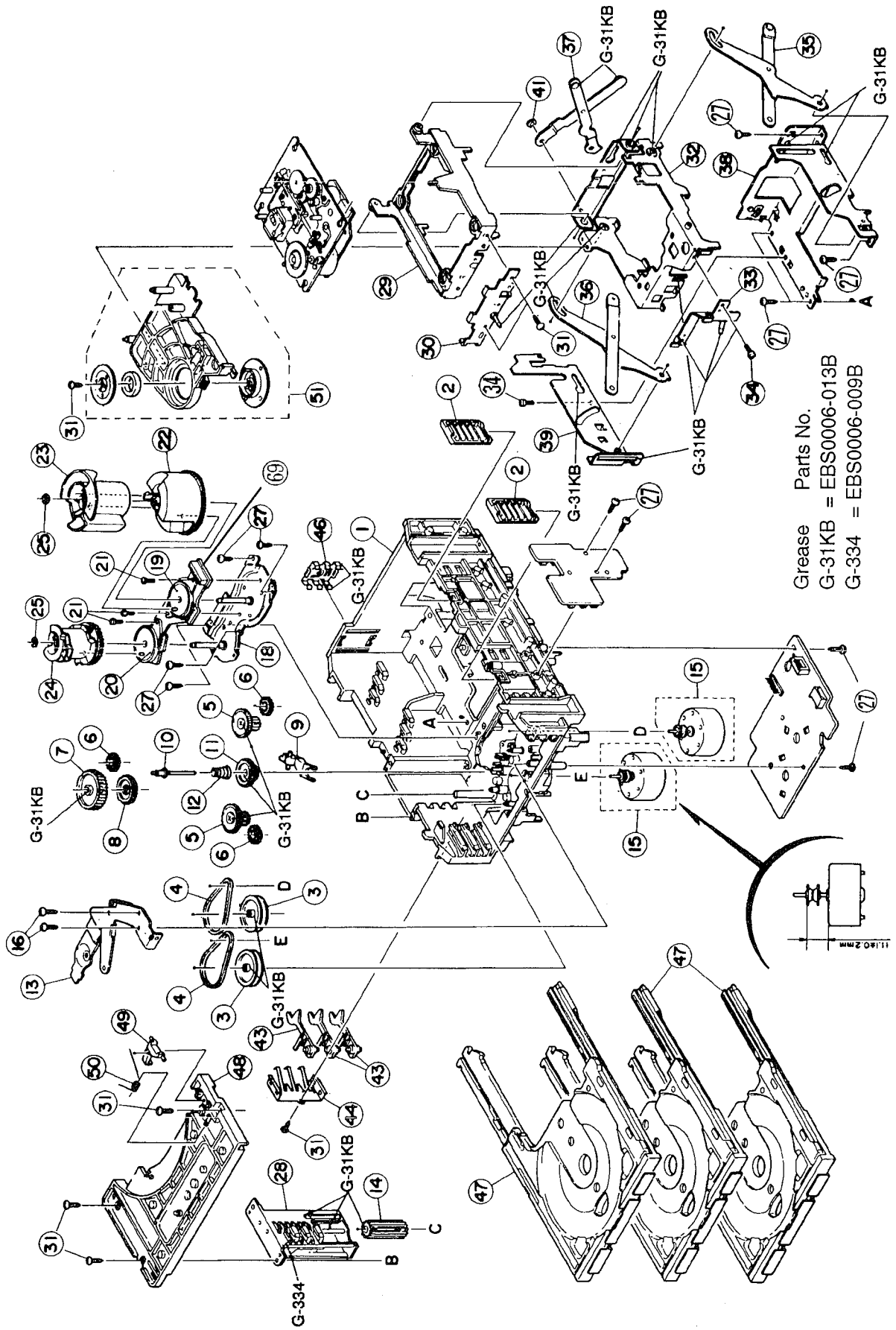
Block No. M 1 M M

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	51	LE20228-002A	LOWER FITTING	1	DISC 1	
	52	LE20230-002A	CENTER FITTING	1	DISC 2	
	53	LE20232-002A	UPPER FITTING	1	DISC 3	
	54	E309765-005SM	VOLUME KNOB	3		
	55	E409229-005SM	VOLUME KNOB	1		
	56	SDSF3006Z	SCREW	1		
	57	E209067-002SM	WINDOW SCREEN	1		
	58	E206967-010SM	METAL COVER	1		
	59	E406308-004	SPECIAL SCREW	4		
	60	LE20222-002A	SHUTTLE COVER	1		
	61	LE20225-004AKP	PUSH BUTTON ASSY	1		
	62	VKS2250-003	TOP BRACKET	1		
	63	SBSF2608Z	SCREW	3		
	64	E406507-001	CAUTION LABEL	1		
	–	LE40210-001A	CAUTION LABEL	1		UT

CD Changer Mechanism Ass'y and Parts List

■ Grease Point

Block No. M 2 M M



■ Parts List (Changer Mechanism Ass'y)

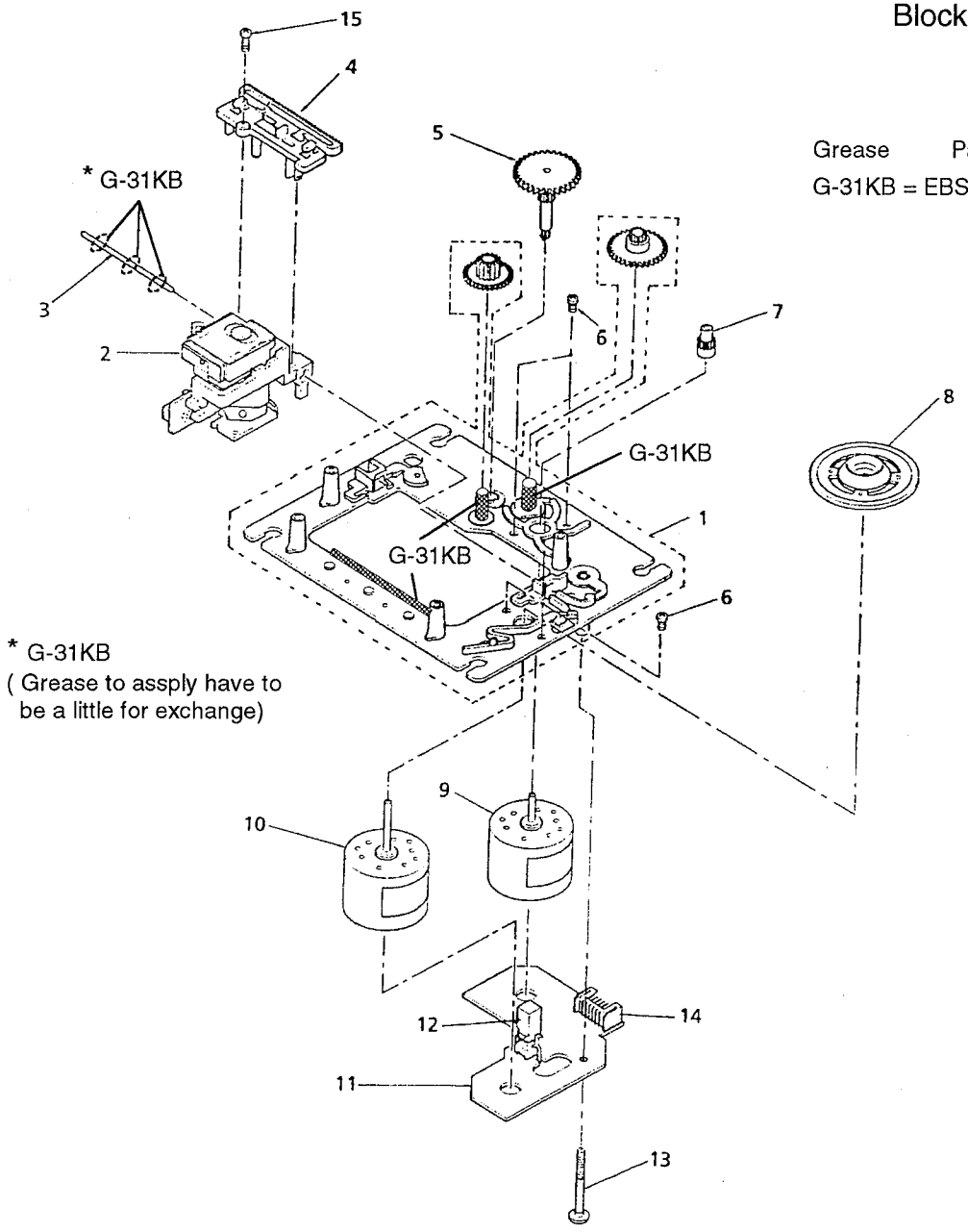
Block No. M 2 M M

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	VKS1144-003	CHASSIS BASE	1		
	2	VKS3698-003	TRAY GUIDE	2		
	3	VKS5532-003	PULLEY GEAR	2		
	4	VKB3000-164	DRIVE BELT	2		
	5	VKS5505-003	GEAR B	2		
	6	VKS5506-002	GEAR C	3		
	7	VKS5507-002	CROSS GEAR U	1		
	8	VKS5508-002	CROSS GEAR L	1		
	9	VKS5510-003	SELECT LEVER	1		
	10	VKH5769-001	GEAR STUD	1		
	11	VKS5511-002	SELECT GEAR	1		
	12	VKW5155-003	COMPRESS SPRING	1		
	13	VKM3846-002	GEAR BRACKET	1		
	14	VKS5509-002MM	CYLINDER GEAR	1		
	15	MSN5D257A-SA2	DC MOTOR	1		
	16	DPSP2616Z	SCREW	2		
	18	VKM3825-00A	CAM GEAR ASSY	1		
	19	VKZ3172-00A	CAM SW. R ASS'Y	1		
	20	VKZ3173-00A	CAM SW. L ASS'Y	1		
	21	SPST2606Z	TAPPING SCREW	1		
	22	VKS2263-002MM	CAM R1	1		
	23	VKS2264-002MM	CAM R2	1		
	24	VKS2265-002MM	CAM GEAR L	1		
	25	WDL316050	SLIT WASHER	2		
	27	SBSF2608Z	TAPPING SCREW	15		
	28	VKS3702-00FMM	DRIVE UNIT	1		
	29	VKS2247-004	MECHA HOLDER A	1		
	30	VKL7767-00B	MECHABRACKET	1		
	31	SBSF2606Z	TAPPING SCREW	3		
	32	VKM3860-00A	MECHA HOLDER ASSY	1		
	33	VKL7802-00C	MECHA HOLDER ASSY	1		
	34	SDST2604Z	SCREW	3		
	35	VKL7810-00A	LIFTER	1		
	36	VKL7811-00A	LIFTER	1		
	37	VKL7812-00A	LIFTER	1		
	38	VKL2732-002	LIFTER BASE	1		
	39	VKM3823-001	LIFTER BRACKET	1		
	40	SDST2604Z	SCREW	1		
	41	WDL266035-2	SLIT WASHER	1		
	43	VKS5514-002MM	LOCK LEVER	3		
	44	VKY3133-002MM	RETURN SPRING	1		
	46	VKY3134-003	CLICK SPRING	1		
	47	VKS2252-00DMM	TRAY ASS'Y	3		
	48	VKS2250-003	TOP BRACKET	1		
	49	VKS5515-002	S.TRAY STOPPER	1		
	50	VKW5156-004	TORSION SPRING	1		
	51	VKS3703-00DMM	CLAMPER ASS'Y	1		
	69	VMC0325-010	CONNECTOR	1		

CD Mechanism Ass'y and Parts List

■ Grease Point

Block No. M 3 M M



Grease Parts No.
G-31KB = EBS0006-013B

■ Parts List (CD Mechanism Ass'y)

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	EPB-002PK	MECHA. BASE ASSY	1		
	2	OPTIMA-150S	OPTICAL PICK UP	1		
	3	E406777-001	CD SHAFT	1		
	4	E307746-001	CD RACK	1		
	5	E307745-221SS	MECHA GEAR	1		
	6	SDSP2003N	SCREW	3		
	7	E406750-001	PINION GEAR	1		
	8	EPB309173A	TURN TABLE	1		
	9	E406784-001	FEED MOTOR	1		
	10	E406783-001	SPINDLE MOTOR	1		
	11	EMW10190-001(S)	P.C.BOARD	1		
	12	ESB1100-005	LEAF SWITCH	1		
	13	E75832-001	SCREW	1		
	14	EMV5109-006B	CONN. TERMINAL	1	6PIN	
	15	SDSF2006Z	SCREW	1		

■ Electrical Parts List (ENN-487)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC601	AN8806SB	I.C(MONO-ANALOG)	
	IC602	BA6897FPW	I.C(MONO-ANALOG)	
	IC603	MN662720RB	I.C(DIGI-MOS)	
		TRANSISTORS		
	Q601	2SA950(O,Y)	SI.TRANSISTOR	
		CAPACITORS		
	C602	QCZ0205-155	1.5MF 25V C.CAP.	
	C604	QETC1AM-107ZN	100MF 10V E.CAP.	
	C605	QETB1HM-106	10MF 50V E.CAP.	
	C606	QCGB1HK-102	1000PF 50V CER.CAP.	
	C607	QCGB1HK-102	1000PF 50V CER.CAP.	
	C608	QETB1HM-105	1MF 50V AL E.CAP.	
	C609	QCBB1HK-101Y	100PF 50V CER.CAP.	
	C610	QFV81HJ-273	0.027MF 50V THIN FILM CAP.	
	C611	QCXB1CM-472Y	4700PF 16V CER.CAP.	
	C612	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C613	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C614	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C615	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C616	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C617	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C618	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C619	QCBB1HK-271Y	270PF 50V CER.CAP.	
	C620	QCSB1HJ-470	47PF 50V CER.CAP.	
	C621	QCGB1HK-102	1000PF 50V CER.CAP.	
	C622	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C623	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C624	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C625	QETC1AM-107ZN	100MF 10V E.CAP.	
	C626	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C631	QETN1EM-106Z	10MF 25V E.CAP.	
	C632	QETC1AM-107ZN	100MF 10V E.CAP.	
	C641	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C642	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C653	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C656	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C661	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C662	QCZ0202-155	1.5MF 25V CER.RES.	
	C663	QFV81HJ-223	0.022MF 50V THIN FILM CAP.	
	C664	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C665	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C673	QER51AM-227	220MF 10V AL E.CAP.	
	C674	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C677	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C678	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
		RESISTORS		
	R601	QRD161J-123	12K 1/6W CARBON RES.	
	R602	QRD161J-102	1K 1/6W CARBON RES.	
	R603	QRD167J-560	56 1/6W CARBON RES.	
	R604	QRD161J-2R2	2.2 1/6W CARBON RES.	
	R605	QRD161J-274	270K 1/6W CARBON RES.	
	R606	QRD167J-154	150K 1/6W CARBON RES.	
	R607	QRD161J-273	27K 1/6W CARBON RES.	
	R609	QRD161J-114	110K 1/6W CARBON RES.	
	R610	QRD161J-104	100K 1/6W CARBON RES.	
	R612	QRD167J-822	8.2K 1/6W CARBON RES.	
	R613	QRD167J-121	120 1/6W CARBON RES.	
	R614	QRD161J-100	10 1/6W CARBON RES.	
	R615	QRD161J-120	12 1/6W CARBON RES.	
	R616	QRD161J-910Y	91 1/6W CARBON RES.	
	R617	QRD161J-125	1.2M 1/6W CARBON RES.	
	R618	QRD161J-473	47K 1/6W CARBON RES.	
	R641	QRD161J-683	68K 1/6W CARBON RES.	
	R642	QRD161J-222	2.2K 1/6W CARBON RES.	
	R643	QRD167J-822	8.2K 1/6W CARBON RES.	
	R644	QRD167J-223	22K 1/6W CARBON RES.	
	R645	QRD167J-223	22K 1/6W CARBON RES.	
	R646	QRD161J-222	2.2K 1/6W CARBON RES.	
	R647	QRD161J-472	4.7K 1/6W CARBON RES.	
	R648	QRD161J-182	1.8K 1/6W CARBON RES.	
	R651	QRD161J-102	1K 1/6W CARBON RES.	
	R652	QRD161J-102	1K 1/6W CARBON RES.	
	R653	QRD161J-102	1K 1/6W CARBON RES.	
	R654	QRD161J-102	1K 1/6W CARBON RES.	
	R655	QRD161J-102	1K 1/6W CARBON RES.	
	R661	QRD161J-683	68K 1/6W CARBON RES.	
	R662	QRD167J-155	1.5M 1/6W CARBON RES.	
	R663	QRD161J-124	120K 1/6W CARBON RES.	
	R664	QRD161J-471	470 1/6W CARBON RES.	
	R666	QRD161J-102	1K 1/6W CARBON RES.	
	R671	QRD161J-101	100 1/6W CARBON RES.	
	R672	QRD161J-102	1K 1/6W CARBON RES.	
	R673	QRD161J-102	1K 1/6W CARBON RES.	
	R674	QRD161J-102	1K 1/6W CARBON RES.	
	R692	QRD161J-101	100 1/6W CARBON RES.	
	R693	QRD161J-101	100 1/6W CARBON RES.	
	R694	QRD161J-101	100 1/6W CARBON RES.	
		OTHERS		
		EMW10675-003	PRINTED BOARD	
	CN601	EMV7144-015R	CONNECT TERMINAL	
	CN602	EMV5109-006A	CONNECT TERMINAL	
	CN607	VMC0163-R23	CONNECT TERMINAL	
	CN611	QMV5005-002K	CONNECT TERMINAL	
	FW603	EWR34D-13LS	FLAT WIRE	
	SP601	VYH7237-001	I.C.COVER	
	SP602	VYH7237-003	I.C.COVER	
	SP603	VYH7237-003	I.C.COVER	
	TW601	EWF102-047	TERMINAL WIRE	

■ Electrical Parts List (ENN-498)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC101	PQ1CF2	I.C(M)	
	IC102	PQ30RV1	I.C(MONO-ANALOG)	
	IC201	HD6433726SD36F	I.C.	
	IC701	NJM4580DD	I.C(MONO-ANALOG)	
	IC901	GP1U271X	INFRARED DETECT UNIT	
	IC921	NJM4580DD	I.C(MONO-ANALOG)	
	IC922	NJM4580DD	I.C(MONO-ANALOG)	
	IC961	NJM4580L	I.C(MONO-ANALOG)	
		DIODES		
	D101	1SR35-100	SI.DIODE	
	D102	1SR35-100	SI.DIODE	
	D103	1SR35-100	SI.DIODE	
	D104	MTZ27JC	ZENER DIODE	
	D111	S3V20F	SI.DIODE	
	D112	S3V20F	SI.DIODE	
	D116	1SR139-200	SI.DIODE	
	D117	1SR139-200	SI.DIODE	
	D121	1SS133	SI.DIODE	
	D122	1SS133	SI.DIODE	
	D131	1SR139-200	SI.DIODE	
	D132	1SR139-200	SI.DIODE	
	D133	1SR139-200	SI.DIODE	
	D134	1SR139-200	SI.DIODE	
	D135	11DF2FD	SI.DIODE	
	D136	MTZ5.6JC	ZENER DIODE	
	D139	MTZ6.2JC	ZENER DIODE	
	D140	1SS119	SI.DIODE	
	D201	1SS133	SI.DIODE	
	D202	1SS133	SI.DIODE	
	D203	1SS133	SI.DIODE	
	D204	MTZ5.1JC	ZENER DIODE	
	D205	1SS119	SI.DIODE	
	D206	1SS119	SI.DIODE	
	D207	1SS119	SI.DIODE	
	D208	1SS133	SI.DIODE	
	D209	1SS133	SI.DIODE	
	D211	1SS133	SI.DIODE	
	D212	1SS133	SI.DIODE	
	D213	1SS119	SI.DIODE	
	D214	1SS119	SI.DIODE	
	D901	1SS133	SI.DIODE	
	D902	1SS133	SI.DIODE	
	D903	1SS133	SI.DIODE	
	D904	1SS133	SI.DIODE	
	D905	1SS133	SI.DIODE	
	D906	1SS133	SI.DIODE	
	D907	1SS133	SI.DIODE	
	D908	1SS133	SI.DIODE	
	D921	SLR-342MCA47	L.E.D.	
	D922	SLR-342MCA47	L.E.D.	
	D923	SLR-342MCA47	L.E.D.	
	D924	SLR-342MCA47	L.E.D.	
	D925	SLR-342MCA47	L.E.D.	
	D926	SLR-342MCA47	L.E.D.	
	D951	SLR-342VC3F	L.E.D.	
	D952	SPR-325MVW	L.E.D.	
	D953	1SS133	SI.DIODE	
	D954	1SS133	SI.DIODE	
	D955	SLR-342MCA47	L.E.D.	
	D956	SLR-342MCA47	L.E.D.	
	D957	SLR-342MCA47	L.E.D.	
	D958	SLR-342MCA47	L.E.D.	
	D959	SLR-342MCA47	L.E.D.	
	D960	SLR-342MCA47	L.E.D.	
	D961	SLR-342MCA47	L.E.D.	
	D962	SLR-342MCA47	L.E.D.	
	D963	SLR-342VC3F	L.E.D.	
	D965	SLR-342MCA47	L.E.D.	
	D966	SLR-342MCA47	L.E.D.	

⚠	Item	Parts Number	Description	Area
	D967	SLR-342MCA47	L.E.D.	
	D968	SLR-342MCA47	L.E.D.	
	D970	MTZ3.9JB	ZENER DIODE	
	D971	MTZ3.9JB	ZENER DIODE	
	D972	MTZ3.9JB	ZENER DIODE	
		TRANSISTORS		
	Q101	DTA114YS	DIGITAL TRANSISTOR	
	Q102	2SD2144S(VW)	SI.TRANSISTOR	
	Q103	2SD2144S(VW)	SI.TRANSISTOR	
	Q106	2SB1357(E,F)	SI.TRANSISTOR	
	Q121	2SA933S(RS)	SI.TRANSISTOR	
	Q122	DTC114YS	DIGITAL TRANSISTOR	
	Q124	DTC124ES	DIGITAL TRANSISTOR	
	Q125	2SB1357(E,F)	SI.TRANSISTOR	
	Q126	2SD1302	SI.TRANSISTOR	
	Q201	DTC114YS	DIGITAL TRANSISTOR	
	Q202	DTC114YS	DIGITAL TRANSISTOR	
	Q203	DTC114YS	DIGITAL TRANSISTOR	
	Q204	DTC114YS	DIGITAL TRANSISTOR	
	Q205	DTC114YS	DIGITAL TRANSISTOR	
	Q211	DTC114YS	DIGITAL TRANSISTOR	
	Q212	DTC114YS	DIGITAL TRANSISTOR	
	Q213	DTC114YS	DIGITAL TRANSISTOR	
	Q415	2SA933S(RS)	SI.TRANSISTOR	
	Q416	DTC114YS	DIGITAL TRANSISTOR	
	Q417	DTA114WS	DIGITAL TRANSISTOR	
	Q418	DTC114YS	DIGITAL TRANSISTOR	
	Q951	DTC114YS	DIGITAL TRANSISTOR	
	Q954	DTC114YS	DIGITAL TRANSISTOR	
	Q955	DTA114YS	DIGITAL TRANSISTOR	
		CAPACITORS		
	C101	QETB1EM-477E	470MF 25V E.CAP.	
	C102	QETN1JM-227Z	220MF 63V ELECTRO	
	C103	QETB1HM-475E	4.7MF 50V E.CAP.	
	C104	QETB1HM-477	470MF 50V AL E.CAP.	
	C106	QCF21HP-473A	0.047MF 50V CER.CAP.	
	C111	QFV81HJ-473	0.047MF 50V THIN FILM CAP.	
	C112	QFV81HJ-473	0.047MF 50V THIN FILM CAP.	
	C113	QETB1EM-478E	4700MF 25V E.CAP.	
	C114	QFV81HJ-333	0.033MF 50V THIN FILM CAP.	
	C116	QETB1HM-474	0.47MF 50V E.CAP.	
	C119	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C121	QETB1EM-226N	22MF 25V E.CAP.	
	C122	QETC1EM-227ZN	220MF 25V AL E.CAP.	
	C126	QETN1EM-106Z	10MF 25V E.CAP.	
	C133	QETB1EM-108	1000MF 25V AL E.CAP.	
	C134	QETB1EM-108	1000MF 25V AL E.CAP.	
	C135	QFV82AJ-104	0.1MF 100V THIN FILM CAP.	
	C143	QETB1EM-477E	470MF 25V E.CAP.	
	C145	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C151	QCZ0205-155	1.5MF 25V C.CAP.	
	C154	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C155	QETB0JM-108N	1000MF 6.3V E.CAP.	
	C156	QETM0JM-338	3300MF 6.3V E.CAP.	
	C159	QETB1CM-107	100MF 16V AL E.CAP.	
	C160	QETB0JM-477	470MF 6.3V AL E.CAP.	
	C163	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C201	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C203	QCZ0205-155	1.5MF 25V C.CAP.	
	C204	QETC1AM-107ZN	100MF 10V E.CAP.	
	C222	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C223	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C224	QFN31HJ-473ZN	0.047MF 50V MYLAR CAP.	
	C225	QETB1HM-225	2.2MF 50V AL E.CAP.	
	C226	QETB1HM-105	1MF 50V AL E.CAP.	
	C227	QEAD0HZ-479ZM	47000MF E.CAP.	
	C228	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C229	QETC1AM-107ZN	100MF 10V E.CAP.	
	C230	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C701	EETB1HM-475E	4.7MF 50V E.CAP.	

■ Electrical Parts List (ENN-498)

⚠	Item	Parts Number	Description	Area
	C702	EETB1HM-475E	4.7MF 50V E.CAP.	
	C717	QETB1EM-107	100MF 25V AL E.CAP.	
	C718	QETB1EM-107	100MF 25V AL E.CAP.	
	C901	QER51HM-475	4.7MF 50V AL E.CAP.	
	C902	QER51HM-475	4.7MF 50V AL E.CAP.	
	C903	QER50JM-476	47MF 6.3V AL E.CAP.	
	C904	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C921	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C922	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C923	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C924	QETB1HM-105	1MF 50V AL E.CAP.	
	C925	QETB1HM-105	1MF 50V AL E.CAP.	
	C926	QETB1HM-105	1MF 50V AL E.CAP.	
	C927	QCBB1HK-561Y	560PF 50V CER.CAP.	
	C928	QCBB1HK-561Y	560PF 50V CER.CAP.	
	C929	QCBB1HK-561Y	560PF 50V CER.CAP.	
	C933	QCSB1HJ-220	22PF 50V CER.CAP.	
	C934	QCSB1HJ-220	22PF 50V CER.CAP.	
	C935	QCSB1HJ-220	22PF 50V CER.CAP.	
	C936	QETB1HM-474	0.47MF 50V E.CAP.	
	C937	QETB1HM-474	0.47MF 50V E.CAP.	
	C938	QETB1HM-105	1MF 50V AL E.CAP.	
	C941	QETB1CM-476	47MF 16V AL E.CAP.	
	C942	QETB1CM-476	47MF 16V AL E.CAP.	
	C946	QCF21HP-473A	0.047MF 50V CER.CAP.	
	C947	QCF21HP-473A	0.047MF 50V CER.CAP.	
	C949	QCF21HP-223A	0.022MF 50V CER.CAP.	
	C961	QER61HM-105Z	1MF 50V AL E.CAP.	
	C962	QCBB1HK-820Y	82PF 50V CER.CAP.	
	C971	QER51CM-226	22MF 16V AL E.CAP.	
	C972	QER51CM-226	22MF 16V AL E.CAP.	
	C984	QCS21HJ-271A	270PF 50V CER.CAP.	
	C985	QCY31HK-103Z	0.01MF 50V CER.CAP.	
	C986	QCY31HK-103Z	0.01MF 50V CER.CAP.	
	C987	QCF21HP-103A	0.01MF 50V CER.CAP.	
		RESISTORS		
	R101	QRD167J-562	5.6K 1/6W CARBON RES.	
	R102	QRD167J-562	5.6K 1/6W CARBON RES.	
	R103	QRD167J-751	750 1/6W CARBON RES.	
	R107	QRD167J-751	750 1/6W CARBON RES.	
⚠	R111	QRZ0077-560	56 1/4W FUSIBLE RES.	
	R112	QRD161J-472	4.7K 1/6W CARBON RES.	
	R113	QRD167J-121	120 1/6W CARBON RES.	
	R114	QRD161J-473	47K 1/6W CARBON RES.	
	R118	QRD161J-752	7.5K 1/6W CARBON RES.	
	R120	QRD161J-393	39K 1/6W CARBON RES.	
	R121	QRD161J-183	18K 1/6W CARBON RES.	
	R122	QRD161J-273	27K 1/6W CARBON RES.	
	R123	QRD161J-221	220 1/6W CARBON RES.	
	R124	QRD161J-331	330 1/6W CARBON RES.	
	R125	QRD161J-183	18K 1/6W CARBON RES.	
	R127	QRD161J-472	4.7K 1/6W CARBON RES.	
	R144	QRD161J-102	1K 1/6W CARBON RES.	
	R148	QRD161J-302	3K 1/6W CARBON RES.	
	R149	QRD167J-152	1.5K 1/6W CARBON RES.	
	R150	QRD161J-561	560 1/6W CARBON RES.	
	R152	QRD161J-101	100 1/6W CARBON RES.	
	R153	QRD161J-222	2.2K 1/6W CARBON RES.	
	R154	QRG01DJ-100X	10 1W OXIDE METAL	
	R155	QRD161J-221	220 1/6W CARBON RES.	
	R156	QRD161J-221	220 1/6W CARBON RES.	
	R157	QRD161J-182	1.8K 1/6W CARBON RES.	
	R202	QRD161J-105	1M 1/6W CARBON RES.	
	R204	QRD161J-472	4.7K 1/6W CARBON RES.	
	R217	QRD161J-103	10K 1/6W CARBON RES.	
	R218	QRD161J-103	10K 1/6W CARBON RES.	
	R221	QRD161J-103	10K 1/6W CARBON RES.	
	R225	QRD161J-103	10K 1/6W CARBON RES.	
	R226	QRD161J-472	4.7K 1/6W CARBON RES.	
	R231	QRD161J-101	100 1/6W CARBON RES.	

⚠	Item	Parts Number	Description	Area
	R232	QRD161J-391	390 1/6W CARBON RES.	
	R233	QRD161J-821	820 1/6W CARBON RES.	
	R235	QRD161J-102	1K 1/6W CARBON RES.	
	R238	QRD161J-470	47 1/6W CARBON RES.	
	R239	QRD161J-470	47 1/6W CARBON RES.	
	R240	QRD161J-470	47 1/6W CARBON RES.	
	R241	QRD161J-750	75 1/6W CARBON RES.	
	R242	QRD161J-750	75 1/6W CARBON RES.	
	R243	QRD161J-221	220 1/6W CARBON RES.	
	R247	QRD161J-103	10K 1/6W CARBON RES.	
	R248	QRD161J-103	10K 1/6W CARBON RES.	
	R249	QRD161J-102	1K 1/6W CARBON RES.	
	R250	QRD161J-104	100K 1/6W CARBON RES.	
	R251	QRD161J-103	10K 1/6W CARBON RES.	
	R252	QRD161J-103	10K 1/6W CARBON RES.	
	R253	QRD161J-102	1K 1/6W CARBON RES.	
	R254	QRD161J-222	2.2K 1/6W CARBON RES.	
	R461	QRD161J-473	47K 1/6W CARBON RES.	
	R462	QRD161J-472	4.7K 1/6W CARBON RES.	
	R463	QRD161J-100	10 1/6W CARBON RES.	
	R703	QRD161J-473	47K 1/6W CARBON RES.	
	R704	QRD161J-473	47K 1/6W CARBON RES.	
	R705	QRD161J-103	10K 1/6W CARBON RES.	
	R706	QRD161J-103	10K 1/6W CARBON RES.	
	R711	QRD167J-151	150 1/6W CARBON RES.	
	R712	QRD167J-151	150 1/6W CARBON RES.	
	R713	QRD161J-331	330 1/6W CARBON RES.	
	R715	QRD161J-331	330 1/6W CARBON RES.	
	R721	QRD161J-472	4.7K 1/6W CARBON RES.	
	R921	QRD161J-473	47K 1/6W CARBON RES.	
	R922	QRD161J-473	47K 1/6W CARBON RES.	
	R923	QRD161J-473	47K 1/6W CARBON RES.	
	R924	QRD161J-103	10K 1/6W CARBON RES.	
	R925	QRD161J-103	10K 1/6W CARBON RES.	
	R926	QRD161J-103	10K 1/6W CARBON RES.	
	R927	QRD161J-102	1K 1/6W CARBON RES.	
	R928	QRD161J-102	1K 1/6W CARBON RES.	
	R929	QRD161J-102	1K 1/6W CARBON RES.	
	R930	QRD161J-561	560 1/6W CARBON RES.	
	R931	QRD161J-561	560 1/6W CARBON RES.	
	R932	QRD161J-561	560 1/6W CARBON RES.	
	R933	QRD167J-223	22K 1/6W CARBON RES.	
	R934	QRD167J-223	22K 1/6W CARBON RES.	
	R935	QRD167J-223	22K 1/6W CARBON RES.	
	R936	QRD161J-471	470 1/6W CARBON RES.	
	R937	QRD161J-471	470 1/6W CARBON RES.	
	R938	QRD161J-181	180 1/6W CARBON RES.	
	R946	QRD161J-331	330 1/6W CARBON RES.	
	R947	QRD161J-331	330 1/6W CARBON RES.	
	R951	QRD161J-471	470 1/6W CARBON RES.	
	R953	QRD161J-181	180 1/6W CARBON RES.	
	R954	QRD161J-821	820 1/6W CARBON RES.	
	R955	QRD161J-471	470 1/6W CARBON RES.	
	R956	QRD161J-471	470 1/6W CARBON RES.	
	R957	QRD161J-621	620 1/6W CARBON RES.	
	R958	QRD161J-112	1.1K 1/6W CARBON RES.	
	R959	QRD161J-222	2.2K 1/6W CARBON RES.	
	R960	QRD167J-682	6.8K 1/6W CARBON RES.	
	R961	QRD161J-182	1.8K 1/6W CARBON RES.	
	R962	QRD167J-272	2.7K 1/6W CARBON RES.	
	R963	QRD161J-123	12K 1/6W CARBON RES.	
	R964	QRD161J-123	12K 1/6W CARBON RES.	
	R965	QRD167J-562	5.6K 1/6W CARBON RES.	
	R967	QRD161J-913	91K 1/6W CARBON RES.	
	R972	QRD167J-511	510 1/6W CARBON RES.	
	R973	QRD167J-511	510 1/6W CARBON RES.	
	R974	QRD161J-472	4.7K 1/6W CARBON RES.	
	RA201	QRB045J-472	4.7K 1/8W NETWORK RES.	
	VR961	QVQ0006-B14	10K VARIABLE RES.	
	VR962	QVQ0006-B14	10K VARIABLE RES.	

■ Electrical Parts List (ENN-498)

⚠	Item	Parts Number	Description	Area
	VR963	QVQ0006-B14	10K VARIABLE RES.	
	VR964	QVQ0006-B14	10K VARIABLE RES.	
		OTHERS		
		EMW10721-003	PRINTED BOARD	
		E3400-431	FELT SPACER	
		SBSG3008CC	TAPPING SCREW	
	J921	QMS6A70-E21H	HEADPHONE JACK	
	J922	QMS3L38-E20S	PIN JACK	
	J923	QMS6A60-E31H	MICROPHONE JACK	
	J924	QMS6A60-E31H	MICROPHONE JACK	
	J925	QMS6A60-E31H	MICROPHONE JACK	
	L101	EQL6003-101U	INDUCTOR	
	L102	EQL6003-101U	INDUCTOR	
	S701	QSS1A13-E01	SLIDE SWITCH	
	S901	ESP0001-023M	TACT SWITCH	
	S902	ESP0001-023M	TACT SWITCH	
	S903	ESP0001-023M	TACT SWITCH	
	S904	ESP0001-023M	TACT SWITCH	
	S905	ESP0001-023M	TACT SWITCH	
	S906	ESP0001-023M	TACT SWITCH	
	S907	ESP0001-023M	TACT SWITCH	
	S908	ESP0001-023M	TACT SWITCH	
	S909	ESP0001-023M	TACT SWITCH	
	S910	ESP0001-023M	TACT SWITCH	
	S911	ESP0001-023M	TACT SWITCH	
	S912	ESP0001-023M	TACT SWITCH	
	S913	ESP0001-023M	TACT SWITCH	
	S914	ESP0001-023M	TACT SWITCH	
	S915	ESP0001-023M	TACT SWITCH	
	S916	ESP0001-023M	TACT SWITCH	
	S917	ESP0001-023M	TACT SWITCH	
	S918	ESP0001-023M	TACT SWITCH	
	S919	ESP0001-023M	TACT SWITCH	
	S920	ESP0001-023M	TACT SWITCH	
	S921	ESP0001-023M	TACT SWITCH	
	S922	ESP0001-023M	TACT SWITCH	
	S923	ESP0001-023M	TACT SWITCH	
	S924	ESP0001-023M	TACT SWITCH	
	S925	ESP0001-023M	TACT SWITCH	
	S926	ESP0001-023M	TACT SWITCH	
	S930	QSW0546-001	SLIDE SWITCH	
	S931	ESP0001-023M	TACT SWITCH	
	S932	ESP0001-023M	TACT SWITCH	
	S933	ESP0001-023M	TACT SWITCH	
	S934	ESP0001-023M	TACT SWITCH	
	S935	ESP0001-023M	TACT SWITCH	
	S936	ESP0001-023M	TACT SWITCH	
	S937	QSS4005-E01	SLIDE SWITCH	
	S938	ESP0001-023M	TACT SWITCH	
	S940	ESP0001-023M	TACT SWITCH	
	S941	ESP0001-023M	TACT SWITCH	
	X201	ECX0008-000KMZ	CRYSTAL	
	BK001	E409182-001SM	EARTH TERMINAL	
	CN101	EMV7145-005Z	SOCKET ASSY	
	CN201	VMC0163-031	FFC SOCKET	
	CN202	VMC0163-021	CONNECT TERMINAL	
	CN203	EMV5109-006A	CONNECT TERMINAL	
	CN211	VMC0163-023	CONNECT TERMINAL	
	CN213	EMV7145-004Z	SOCKET ASSY	
	CN214	VMC0163-010	AC CONNECTOR	
	CN221	EMV7163-012	CONNECT TERMINAL	
	CN223	EMV7163-010	CONNECT TERMINAL	
	CN401	EMV7163-009	CONNECT TERMINAL	
	CN501	EMV7171-115	CONNECT TERMINAL	
	CN502	EWS26C-A210J	SOCKET WIRE ASSY	
	CN503	EWS266-A225J	SOCKET WIRE ASSY	
	CN901	EMV7160-031	CONNECT TERMINAL	
	CN951	VMC0163-R21	CONNECT TERMINAL	
	CN961	EWS266-A413	SOCKET WIRE ASSY	
⚠	CP112	ICP-N15	I.C.PROTECTOR	

⚠	Item	Parts Number	Description	Area
	DI901	ELU0001-212	FLUORESCENT DISPLAY TUBE	
	EP921	E406523-001SM	EARTH BRACKET	
	FH901	E308192-001	FL HOLDER	
	FS901	E306805-014	FELT SPACER	
	FW224	EWR33D-25LS	FLAT WIRE	
	FW921	EWR36D-13LS	CORD	
	FW922	EWR37D-13LS	CORD	
	FW951	EWR33D-08SS	FLAT WIRE	
	HS001	E70306-001	HEAT SINK	
	JT921	EMV7145-003Z	SOCKET ASSY	
	JT922	EMV7145-003Z	SOCKET ASSY	
	JT923	EMV7145-004Z	SOCKET ASSY	
	JT924	EMV7145-003Z	SOCKET ASSY	
	SP201	VYH7653-001	LEAF SPRING	

■ Electrical Parts List (ENN-499)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC301	TC9409BF-000	I.C(M)	
	IC401	LA1140B	I.C(MONO-ANALOG)	
	IC402	NJM4580DD	I.C(MONO-ANALOG)	
	IC501	MN35503	I.C(DIGI-MOS)	
	IC502	NJM4580DD	I.C(MONO-ANALOG)	
	IC503	NJM4580DD	I.C(MONO-ANALOG)	
	IC504	AN7395S-W	I.C(M)	
	IC505	NJM78L09A-T	I.C(M)	
		DIODES		
	D441	MTZ9.1JA	ZENER DIODE	
	D442	MTZ5.6JC	ZENER DIODE	
	D571	MTZ6.8JC	ZENER DIODE	
		TRANSISTORS		
	Q403	2SD1302	SI.TRANSISTOR	
	Q404	DTA144WSA-T	SILICON	
	Q411	2SB1357(E,F)	SI.TRANSISTOR	
	Q413	2SA933S(RS)	SI.TRANSISTOR	
	Q414	2SD1302	SI.TRANSISTOR	
	Q551	2SD1302	SI.TRANSISTOR	
	Q552	2SD1302	SI.TRANSISTOR	
	Q553	DTC114YS	DIGITAL TRANSISTOR	
	Q554	DTC114YS	DIGITAL TRANSISTOR	
		CAPACITORS		
	C302	QETBOJM-227	220MF 6.3V E.CAP.	
	C303	QETC1AM-107ZN	100MF 10V E.CAP.	
	C304	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C306	QETB1HM-475E	4.7MF 50V E.CAP.	
	C307	QFN81HJ-222	2200PF 50V METAL.MYLAR	
	C308	QCBB1HK-681Y	680PF 50V CER.CAP.	
	C309	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C310	QETC1AM-107ZN	100MF 10V E.CAP.	
	C311	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C316	QCZ0205-155	1.5MF 25V C.CAP.	
	C317	QETBOJM-227	220MF 6.3V E.CAP.	
	C318	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C319	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C321	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C323	QCZ0205-155	1.5MF 25V C.CAP.	
	C324	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C355	QETC1AM-107ZN	100MF 10V E.CAP.	
	C360	QCGB1HK-102	1000PF 50V CER.CAP.	
	C401	QCC21EM-473	0.047MF 25V CER.CAP.	
	C402	QETC1CM-106Z	10MF 16V AL E.CAP.	
	C403	QETB1HM-335	3.3MF 50V AL E.CAP.	
	C404	QCC21EM-473	0.047MF 25V CER.CAP.	
	C405	QCC21EM-473	0.047MF 25V CER.CAP.	
	C406	QCC21EM-473	0.047MF 25V CER.CAP.	
	C407	QCSB1HJ-330Y	33PF 50V CER.CAP.	
	C408	QCC21EM-473	0.047MF 25V CER.CAP.	
	C409	QETB1CM-107	100MF 16V AL E.CAP.	
	C411	QCC21EM-473	0.047MF 25V CER.CAP.	
	C412	QETB1HM-475E	4.7MF 50V E.CAP.	
	C413	QFN31HJ-473ZN	0.047MF 50V MYLAR CAP.	
	C414	QETB1HM-475E	4.7MF 50V E.CAP.	
	C415	QFN31HJ-123Z	0.012MF 50V MYLAR CAP.	
	C421	QETB1EM-226N	22MF 25V E.CAP.	
	C422	QETB1EM-226N	22MF 25V E.CAP.	
	C431	QETB1HM-474	0.47MF 50V E.CAP.	
	C432	QFN31HJ-332Z	3300PF 50V MYLAR CAP.	
	C433	QCBB1HK-121Y	120PF 50V CER.CAP.	
	C434	QETB1HM-474	0.47MF 50V E.CAP.	
	C436	QETB1HM-474	0.47MF 50V E.CAP.	
	C438	QETB1HM-105	1MF 50V AL E.CAP.	
	C441	QETB1CM-107	100MF 16V AL E.CAP.	
	C501	QCZ0205-155	1.5MF 25V C.CAP.	
	C502	QETBOJM-227	220MF 6.3V E.CAP.	
	C503	QETB1HM-475E	4.7MF 50V E.CAP.	
	C505	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C506	QETBOJM-477	470MF 6.3V AL E.CAP.	

⚠	Item	Parts Number	Description	Area
	C507	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C508	QCT30CH-180Y	18PF 50V CER.CAP.	
	C509	QCT30CH-180Y	18PF 50V CER.CAP.	
	C510	QETC1AM-476ZM	47MF 10V E.CAP.	
	C511	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C512	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C521	QFN31HJ-392Z	3900PF 50V MYLAR CAP.	
	C522	QFN31HJ-392Z	3900PF 50V MYLAR CAP.	
	C523	QFN31HJ-333Z	0.033MF 50V MYLAR CAP.	
	C524	QFN31HJ-333Z	0.033MF 50V MYLAR CAP.	
	C525	QCBB1HK-181Y	180PF 50V CER.CAP.	
	C526	QCBB1HK-181Y	180PF 50V CER.CAP.	
	C527	QETB1EM-107	100MF 25V AL E.CAP.	
	C528	QETB1EM-107	100MF 25V AL E.CAP.	
	C531	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C532	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C533	QETB1EM-107	100MF 25V AL E.CAP.	
	C534	QETB1EM-107	100MF 25V AL E.CAP.	
	C537	EETB1HM-476E	47MF 50V E.CAP.	
	C538	EETB1HM-476E	47MF 50V E.CAP.	
	C539	QFN31HJ-152Z	1500PF 50V MYLAR CAP.	
	C540	QFN31HJ-152Z	1500PF 50V MYLAR CAP.	
	C551	QETB1HM-106	10MF 50V E.CAP.	
	C552	QETB1HM-106	10MF 50V E.CAP.	
	C553	QETB1HM-106	10MF 50V E.CAP.	
	C554	QETB1HM-106	10MF 50V E.CAP.	
	C555	QETB1HM-106	10MF 50V E.CAP.	
	C556	QETB1HM-106	10MF 50V E.CAP.	
	C557	QETB1AM-227	220MF 10V E.CAP.	
	C558	QETB1HM-475E	4.7MF 50V E.CAP.	
	C559	QETB1HM-226E	22MF 50V E.CAP.	
	C560	QETC1AM-107ZN	100MF 10V E.CAP.	
	C561	QETB1HM-475E	4.7MF 50V E.CAP.	
	C562	QCZ0205-155	1.5MF 25V C.CAP.	
	C563	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C564	QFN31HJ-273Z	0.027MF 50V MYLAR CAP.	
	C565	QFN81HJ-393	0.039MF 50V METAL.MYLAR	
	C566	QFN31HJ-563Z	0.056MF 50V MYLAR CAP.	
	C571	QETCOJM-477ZM	470MF 6.3V E.CAP.	
	C574	QCS21HJ-680A	68PF 50V CER.CAP.	
	C575	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
		RESISTORS		
	R234	QRD161J-183	18K 1/6W CARBON RES.	
	R303	QRD161J-103	10K 1/6W CARBON RES.	
	R304	QRD161J-103	10K 1/6W CARBON RES.	
	R305	QRD161J-103	10K 1/6W CARBON RES.	
	R311	QRD161J-102	1K 1/6W CARBON RES.	
	R321	QRD161J-102	1K 1/6W CARBON RES.	
	R322	QRD161J-102	1K 1/6W CARBON RES.	
	R323	QRD161J-102	1K 1/6W CARBON RES.	
	R328	QRD161J-101	100 1/6W CARBON RES.	
	R402	QRD161J-331	330 1/6W CARBON RES.	
	R403	QRD161J-394	390K 1/6W CARBON RES.	
	R405	QRD161J-104	100K 1/6W CARBON RES.	
	R406	QRD161J-242	2.4K 1/6W CARBON RES.	
	R407	QRD161J-202	2K 1/6W CARBON RES.	
	R408	QRD167J-334	330K 1/6W CARBON RES.	
	R409	QRD161J-392	3.9K 1/6W CARBON RES.	
	R410	QRD161J-333	33K 1/6W CARBON RES.	
	R411	QRD167J-562	5.6K 1/6W CARBON RES.	
	R413	QRD161J-183	18K 1/6W CARBON RES.	
	R414	QRD161J-103	10K 1/6W CARBON RES.	
	R415	QRD161J-101	100 1/6W CARBON RES.	
	R421	QRD161J-271	270 1/6W CARBON RES.	
	R423	QRD161J-271	270 1/6W CARBON RES.	
	R431	QRD161J-183	18K 1/6W CARBON RES.	
	R432	QRD161J-823	82K 1/6W CARBON RES.	
	R433	QRD167J-153	15K 1/6W CARBON RES.	
	R434	QRD161J-104	100K 1/6W CARBON RES.	
	R435	QRD161J-104	100K 1/6W CARBON RES.	

■ Electrical Parts List (ENN-499)

⚠	Item	Parts Number	Description	Area
	R436	QRD161J-222	2.2K 1/6W CARBON RES.	
	R438	QRD161J-472	4.7K 1/6W CARBON RES.	
	R439	QRD161J-362	3.6K 1/6W CARBON RES.	
	R443	QRD161J-183	18K 1/6W CARBON RES.	
	R451	QRD161J-221	220 1/6W CARBON RES.	
	R452	QRD161J-102	1K 1/6W CARBON RES.	
	R453	QRD161J-102	1K 1/6W CARBON RES.	
	R454	QRD161J-102	1K 1/6W CARBON RES.	
	R455	QRD161J-103	10K 1/6W CARBON RES.	
	R456	QRD161J-221	220 1/6W CARBON RES.	
	R457	QRD161J-103	10K 1/6W CARBON RES.	
	R461	QRD161J-333	33K 1/6W CARBON RES.	
	R462	QRD161J-182	1.8K 1/6W CARBON RES.	
	R463	QRD161J-391	390 1/6W CARBON RES.	
	R464	QRD161J-103	10K 1/6W CARBON RES.	
	R465	QRD161J-222	2.2K 1/6W CARBON RES.	
	R503	QRD161J-243	24K 1/6W CARBON RES.	
	R504	QRD161J-163	16K 1/6W CARBON RES.	
	R505	QRD161J-163	16K 1/6W CARBON RES.	
	R506	QRD161J-243	24K 1/6W CARBON RES.	
	R508	QRD161J-101	100 1/6W CARBON RES.	
	R509	QRD161J-243	24K 1/6W CARBON RES.	
	R510	QRD161J-163	16K 1/6W CARBON RES.	
	R511	QRD161J-243	24K 1/6W CARBON RES.	
	R512	QRD161J-163	16K 1/6W CARBON RES.	
	R513	QRD161J-181	180 1/6W CARBON RES.	
	R515	QRD161J-102	1K 1/6W CARBON RES.	
	R521	QRD167J-682	6.8K 1/6W CARBON RES.	
	R522	QRD167J-682	6.8K 1/6W CARBON RES.	
	R525	QRD161J-362	3.6K 1/6W CARBON RES.	
	R526	QRD161J-362	3.6K 1/6W CARBON RES.	
	R527	QRD161J-162	1.6K 1/6W CARBON RES.	
	R528	QRD161J-162	1.6K 1/6W CARBON RES.	
	R529	QRD161J-183	18K 1/6W CARBON RES.	
	R530	QRD161J-183	18K 1/6W CARBON RES.	
	R533	QRD161J-243	24K 1/6W CARBON RES.	
	R534	QRD161J-243	24K 1/6W CARBON RES.	
	R535	QRD161J-271	270 1/6W CARBON RES.	
	R537	QRD161J-271	270 1/6W CARBON RES.	
	R543	QRD161J-243	24K 1/6W CARBON RES.	
	R544	QRD161J-243	24K 1/6W CARBON RES.	
	R545	QRD161J-273	27K 1/6W CARBON RES.	
	R546	QRD161J-273	27K 1/6W CARBON RES.	
	R547	QRD161J-471	470 1/6W CARBON RES.	
	R548	QRD161J-471	470 1/6W CARBON RES.	
	R551	QRD161J-101	100 1/6W CARBON RES.	
	R552	QRD161J-101	100 1/6W CARBON RES.	
	R553	QRD161J-271	270 1/6W CARBON RES.	
	R555	QRD161J-271	270 1/6W CARBON RES.	
	R561	QRD167J-223	22K 1/6W CARBON RES.	
	R562	QRD167J-223	22K 1/6W CARBON RES.	
	R571	QRD161J-104	100K 1/6W CARBON RES.	
	R573	QRD161J-564	560K 1/6W CARBON RES.	
	R574	QRD161J-684	680K 1/6W CARBON RES.	
	R575	QRD167J-332	3.3K 1/6W CARBON RES.	
	R576	QRD161J-472	4.7K 1/6W CARBON RES.	
	R577	QRD167J-154	150K 1/6W CARBON RES.	
	R578	QRD161J-105	1M 1/6W CARBON RES.	
	R579	QRD161J-393	39K 1/6W CARBON RES.	
	R580	QRD161J-162	1.6K 1/6W CARBON RES.	
	R581	QRD161J-123	12K 1/6W CARBON RES.	
	R582	QRD161J-123	12K 1/6W CARBON RES.	
	R701	QRD161J-561	560 1/6W CARBON RES.	
	R702	QRD161J-561	560 1/6W CARBON RES.	
	VR401	QVZ3521-222Z	VARIABLE	
		OTHERS		
		EMW10722-003	PRINTED BOARD	
		E3400-431	FELT SPACER	
	BLU	QWE886-08RR	VINYL WIRE	
	J701	EMN00TV-223AJ1	PIN JACK	

⚠	Item	Parts Number	Description	Area
	J702	EMN00TV-117A	PIN JACK	
	K501	ENZ8101-007	INDUCTOR	
	K502	ENZ8101-007	INDUCTOR	
	K503	ENZ8101-007	INDUCTOR	
	K504	ENZ8101-007	INDUCTOR	
	K505	ENZ8101-007	INDUCTOR	
	L401	PELN1032	I.F. TRANSFORMER	
	L402	PELN1031	I.F. TRANSFORMER	
	ORG	QWE883-08RR	VINYL WIRE	
⚠	P101	QMCB001-E02H	AC SOCKET	
⚠	S151	QSS1L22-E01	SLIDE SWITCH	
	X501	ECX0169-344EA	CRYSTAL	
	YLW	QWE884-09RR	VINYL WIRE	
	AT401	EMB40YV-201K	ANTENNA TERMINAL	
	CF401	ECB2123-006R	CERAMIC FILTER	
	CN222	EMV5163-012R	CONNECT TERMINAL	
	CN224	EMV5163-010R	CONNECT TERMINAL	
	CN402	EMV5163-009R	CONNECT TERMINAL	
	CN551	EMV7145-003Z	SOCKET ASSY	
⚠	CP401	ICP-N10	I.C. PROTECTOR	
	EP401	E409182-001SM	EARTH TERMINAL	
	FW101	EWR35D-20LS	FLAT WIRE	
	PW401	QWE350-05BB	VINYL WIRE	
	PW501	QWE353-08RR	SHIELD WIRE	
	PW502	QWE359-07RR	WIRE	
	SP301	VYH7653-013	IC HOLDER	
	SP501	VYH7653-003	I.C. PROTECTOR	
	SP504	VYH7653-002	I.C. PROTECTOR	
	TU401	EAF2206-001	FRONT END	

■ Electrical Parts List (ENV-004)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC101	CL480-F1	I.C(MICRO-COMPUTER)	
	IC102	JCE8006-X	I.C(M)	
	IC103	HM514260CJ-7X	I.C(D-RAM)	
	IC104	BU1417K	I.C(DIGI-MOS)	
	IC105	BU2173F-X	I.C(DIGI-MOS)	
	IC106	UPD6461GS-635X	I.C(MICRO-COMPUTER)	
	IC107	PQ20VZ11X	I.C(M)	
	IC108	TC7SH04FU	I.C(DIGI-MOS)	
	IC111	MN171601AK8J2	I.C(MICRO-COMPUTER)	
	IC112	TC55257DFLL85EX	I.C(S-RAM)	
	IC113	HD74HCT244FP-XE	I.C.	
	IC114	HD74HCT245FP-XE	I.C.	
	IC115	TC74VHC02F-X	I.C(DIGI-MOS)	
		DIODES		
	D141	DTZ4.7(B)-X	ZENER DIODE	
		TRANSISTORS		
	Q101	DTA114EKA-X	DIGITAL TRANSISTOR	
		CAPACITORS		
	C101	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C102	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C103	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C105	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C106	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C107	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C110	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C111	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C112	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C113	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C115	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C116	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C122	NCS31HJ-150AY	15PF 50V CER.CAP.	
	C123	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C124	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C125	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C126	NEA20JM-226NZ	22MF 6.3V AL E.CAP.	
	C127	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C131	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C132	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C133	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C134	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C141	NCB31HK-472AY	4700PF 50V CER.CAP.	
	C151	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C152	NEA20JM-226NZ	22MF 6.3V AL E.CAP.	
	C153	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C154	NEA20JM-226NZ	22MF 6.3V AL E.CAP.	
	C155	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C156	NEA20JM-226NZ	22MF 6.3V AL E.CAP.	
	C157	NEA20JM-226NZ	22MF 6.3V AL E.CAP.	
	C158	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C162	NCS31HJ-681AY	680PF 50V C.CAPA. C.M	
	C168	NCB31HK-152AY	1500PF 50V CER.CAP.	
	C169	NCS31HJ-102AYM	1000PF 50V CER.CAP.	
	C173	NCB31HK-122AY	1200PF 50V CER.CAP.	
	C181	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	TC101	ENZ1003-017T	010MF TRIMMER CAPA	
		RESISTORS		
	R102	NRSA63J-473NY	METAL GLAZE	
	R103	NRSA63J-103N	METAL GLAZE	
	R104	NRSA63J-105NY	METAL GLAZE	
	R105	NRSA63J-242NY	METAL GLAZE	
	R106	NRSA63J-682NY	METAL GLAZE	
	R107	NRSA63J-112NY	METAL GLAZE	
	R109	NRSA63J-750NY	METAL GLAZE	
	R110	NRSA63J-750NY	METAL GLAZE	
	R111	NRSA63J-182NY	METAL GLAZE	
	R112	NRSA63J-112NY	METAL GLAZE	
	R115	NRSA63J-0R0AY	METAL GLAZE	
	R121	NRSA63J-102NY	METAL GLAZE	
	R122	NRSA63J-102NY	METAL GLAZE	

⚠	Item	Parts Number	Description	Area
	R123	NRSA63J-102NY	METAL GLAZE	
	R124	NRSA63J-102NY	METAL GLAZE	
	R125	NRSA63J-102NY	METAL GLAZE	
	R135	NRSA63J-121NY	METAL GLAZE	
	R141	NRSA63J-750NY	METAL GLAZE	
	R142	NRSA63J-562NY	METAL GLAZE	
	R153	NRSA63J-222NY	METAL GLAZE	
	R154	NRSA63J-331NY	METAL GLAZE	
	R155	NRSA63J-271NY	METAL GLAZE	
	R191	NRSA63J-820NY	METAL GLAZE	
	R192	NRSA63J-820NY	METAL GLAZE	
	R193	NRSA63J-820NY	METAL GLAZE	
	R194	NRSA63J-750NY	METAL GLAZE	
		OTHERS		
		EMW10624-101	PRINTED BOARD	
	K101	ENZ8102-N102AY	FERRITE BEADS	
	K103	ENZ8102-N102AY	FERRITE BEADS	
	L102	VQP1007-2R7Y	INDUCTOR	
	L103	VQP1007-2R7Y	INDUCTOR	
	CN101	EMV7154-215E	CONNECT TERMINAL	
	CN102	EMV5109-012BE	CONNECT TERMINAL	
	CN103	EMV5109-006BE	CONNECT TERMINAL	

■ Electrical Parts List (Changer Control P.C.B.)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC801	UPD65612GB-208	I.C(M)	
	IC802	TA8409S	I.C(MONO-ANALOG)	
	IC803	TA8409S	I.C(MONO-ANALOG)	
		CAPACITORS		
	C801	QEK51AM-107	AL E.CAP.	
	C802	QEK51EM-475	AL E.CAP.	
	C803	QFLB1HJ-102	1000PF 50V MYLAR CAP.	
	C804	QCFB1HZ-104Y	0.1MF 50V CER.CAP.	
	C805	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C806	QEK51CM-476	AL E.CAP.	
	C808	QFLB1HJ-102	1000PF 50V MYLAR CAP.	
	C810	QCZ0205-155	1.5MF 25V C.CAP.	
	C811	QCZ0205-155	1.5MF 25V C.CAP.	
	C813	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C821	QCBB1HK-102Y	1000PF 50V CER.CAP.	
		RESISTORS		
	R805	QRD161J-102	1K 1/6W CARBON RES.	
	R806	QRD161J-471	470 1/6W CARBON RES.	
	R807	QRD161J-471	470 1/6W CARBON RES.	
	R808	QRD161J-102	1K 1/6W CARBON RES.	
	R810	QRD161J-684	680K 1/6W CARBON RES.	
	R811	QRD161J-105	1M 1/6W CARBON RES.	
	R813	QRD161J-102	1K 1/6W CARBON RES.	
	R814	QRD161J-102	1K 1/6W CARBON RES.	
	R815	QRD161J-102	1K 1/6W CARBON RES.	
	R816	QRD161J-102	1K 1/6W CARBON RES.	
	R817	QRD161J-102	1K 1/6W CARBON RES.	
	R818	QRD161J-102	1K 1/6W CARBON RES.	
	R819	QRD161J-102	1K 1/6W CARBON RES.	

⚠	Item	Parts Number	Description	Area
	R820	QRD161J-102	1K 1/6W CARBON RES.	
	R821	QRD161J-102	1K 1/6W CARBON RES.	
	R822	QRD161J-102	1K 1/6W CARBON RES.	
	R823	QRD161J-102	1K 1/6W CARBON RES.	
	R824	QRD161J-102	1K 1/6W CARBON RES.	
	R825	QRD161J-102	1K 1/6W CARBON RES.	
	R826	QRD161J-102	1K 1/6W CARBON RES.	
	R827	QRD161J-102	1K 1/6W CARBON RES.	
	R828	QRD161J-102	1K 1/6W CARBON RES.	
	R829	QRD161J-102	1K 1/6W CARBON RES.	
	R830	QRD161J-102	1K 1/6W CARBON RES.	
	R832	QRD161J-181	180 1/6W CARBON RES.	
	R833	QRD161J-102	1K 1/6W CARBON RES.	
	R834	QRD161J-102	1K 1/6W CARBON RES.	
	R839	QRD167J-332	3.3K 1/6W CARBON RES.	
	R840	QRD167J-562	5.6K 1/6W CARBON RES.	
		OTHERS		
		VMW1377-004A	PW BOARD	
		SBSF2608Z	TAPPING SCREW	
		VYH7237-001SS	IC HOLDER	
	L801	VQP0018-100	INDUCTOR	
	L802	VQP0033-100Z	INDUCTOR	
	L803	VQP0033-100Z	INDUCTOR	
	L804	VQP0033-100Z	INDUCTOR	
	CN801	VMC0163-R10	CONNECT TERMINAL	
	CN802	VMC0289-P07	CONNECT TERMINAL	
	CN803	VMC0324-12310	CONNECT TERMINAL	
	CN804	VMC0289-S07	CONNECTOR	

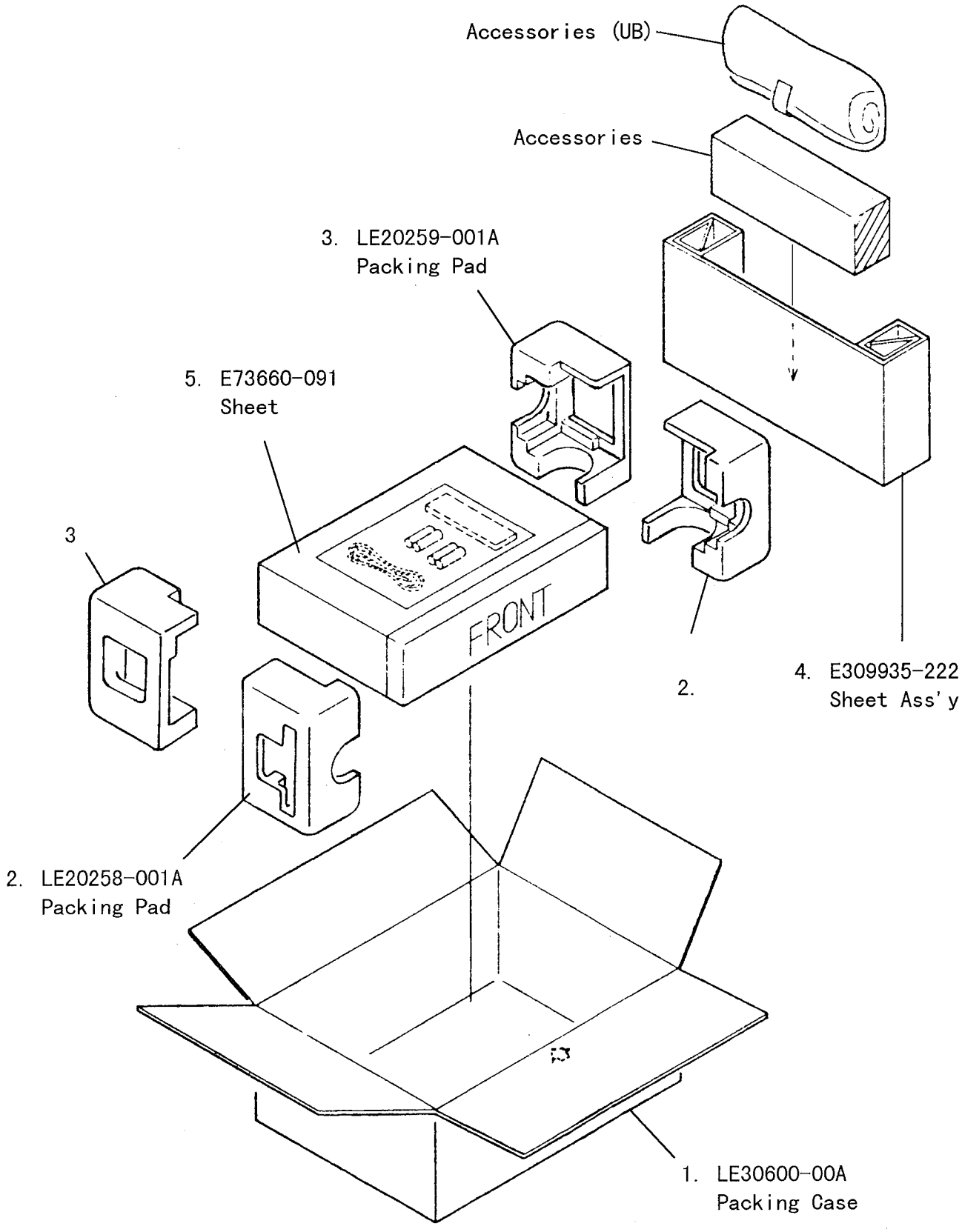
Accessories List

Block No. M 4 M M

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	LET0080-001A	INSTRUCTION BOOK	1		
	2	LET0095-001B	ERRATA SHEET	1		
⚠	3	QMP5520-1835BS	POWER CORD	1		UB
⚠		QMP7530-183	POWER CORD	1		U UF UT
	4	E309758-003	ENVELOPE	2		UB
		E309758-003	ENVELOPE	1		Except UB
	5	ENZ2203-001	ADAPTOR PLUG	1		U UT
	6	PEAC0359-120	SIGNAL CORD	1		
	7	RM-SXMV55U	WIRE-LESS REMOTE CONTROL	1		
	8	R6SPTT-2ST	BATTERY	2		
	9	PEAC0418	MICROPHONE	1		

Packing Materials and Part Numbers

Block No. M 5 M M



PARTS LIST
< XL-MV33BK >

* All printed circuit boards and its assemblies are not available as service parts.

The Marks for Designated Areas
U --- Universal Type
UB --- Hong Kong
UF --- China
US --- Singapore
UT --- Taiwan
No mark indicates all areas.

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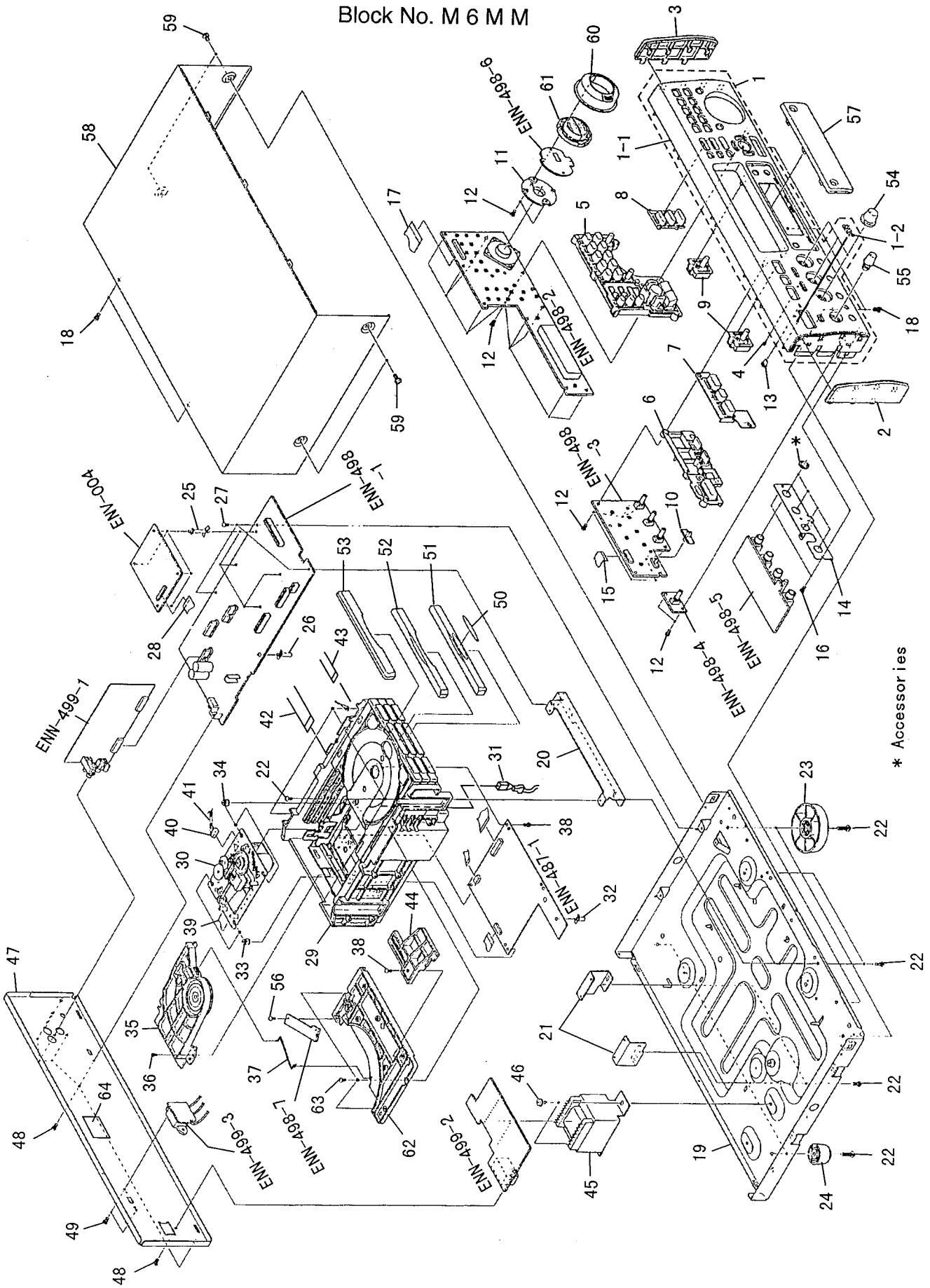
General Exploded View and Parts List

Block No. M 6 M M



■ Parts List

Block No. M 6 M M

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	EFP-XLMV33BKU(S	FRONT PANEL ASSY			
	1-1	E103240-006SM	FRONT PANEL	1		
	1-2	VJD5429-001	JVC MARK	1		
	2	E209077-001SM	SIDE FITTING	1		
	3	E209078-001SM	SIDE FITTING	1		
	4	E406686-001SM	INDICATOR LENS	1	AUX	
	5	E103242-003SM	PUSH BUTTON	1	10KEY	
	6	LE20217-001A	PUSH BUTTON	1	POWER	
	7	LE20219-001A	PUSH BUTTON	1	KEY CON.	
	8	E309760-002	PUSH BUTTON	1	DISC	
	9	LE30472-001A	PUSH BUTTON	2	V. INT, B. DIGEST	
	10	E75563-006SM	SLIDE KNOB	1		
	11	LE20221-001A	SHUTTLE BASE	1		
	12	SDSF2608Z	SCREW	19		
	13	FSJD4001-002	INDICATOR LENS	1	POWER	
	14	E309766-002ST	MIC BKT	1		
	15	VWF1221-45TTB	FFC CABLE	1		
	16	SDSF2606M	TAPPING SCREW	2		
	17	VWF1231-14PPB	FFC CABLE	1		
	18	SBSG3008M	TAPPING SCREW	5		
	19	E103006-004SM	CHASSIS BASE	1		
	20	E309769-002ST	MECHA. BKT FRONT	1		
	21	E309770-001ST	MECHA. BKT REAR	2		
	22	SBST3008Z	TAPPING SCREW	12		
	23	VJF4039-00MSM	FOOT ASSY	2		
	24	E47227-036	FOOT	2		
	25	E300167-002	FASTENER	4		
	26	E310244-002	FASTENER	1		
	27	GBSG3008CC	TAPPING SCREW	3		
	28	VWF1015-06TTA	FLAT WIRE	1		
	29	----------	CD CHANGER MECHANISM ASSY	1		
	30	----------	CD MECHANISM ASSY	1		
	31	EWPZ01-013	FLAT WIRE	1		
	32	E310244-001	FASTENER	1		
	33	FMYH4003-001	INSULATOR	2		
	34	FMYH4003-002	INSULATOR	2		
	35	VKS3703-00FMM	CLAMPER	1		
	36	SPST2606Z	TAPPING SCREW	1		
	37	VKW5187-001	ROD	1		
	38	SBSF3008Z	TAPPING SCREW	2		
	39	QUQ110-1509AJ	FLAT WIRE	1		
	40	VDM1001-M001A	SOCKET WIRE ASSY	1		
	41	VYSA1R2-033	SPACER	1		
	42	VWF1223-14TTB	FLAT WIRE	1		
	43	VWF1210-08TTB	FLAT WIRE	1		
	44	E309662-001	DISC STOPPER	1		
⚠	45	QQT0173-001	POWER TRANSFORMER	1		
	46	E65389-004	SPECIAL SCREW	2		
	47	LE20256-004AKP	REAR PANEL	1		
	48	E73273-003	SPECIAL SCREW	6		
	49	SBSF2608M	TAPPING SCREW	2		
	50	LE30473-001A	MARK PLATE	1		

■ Parts List

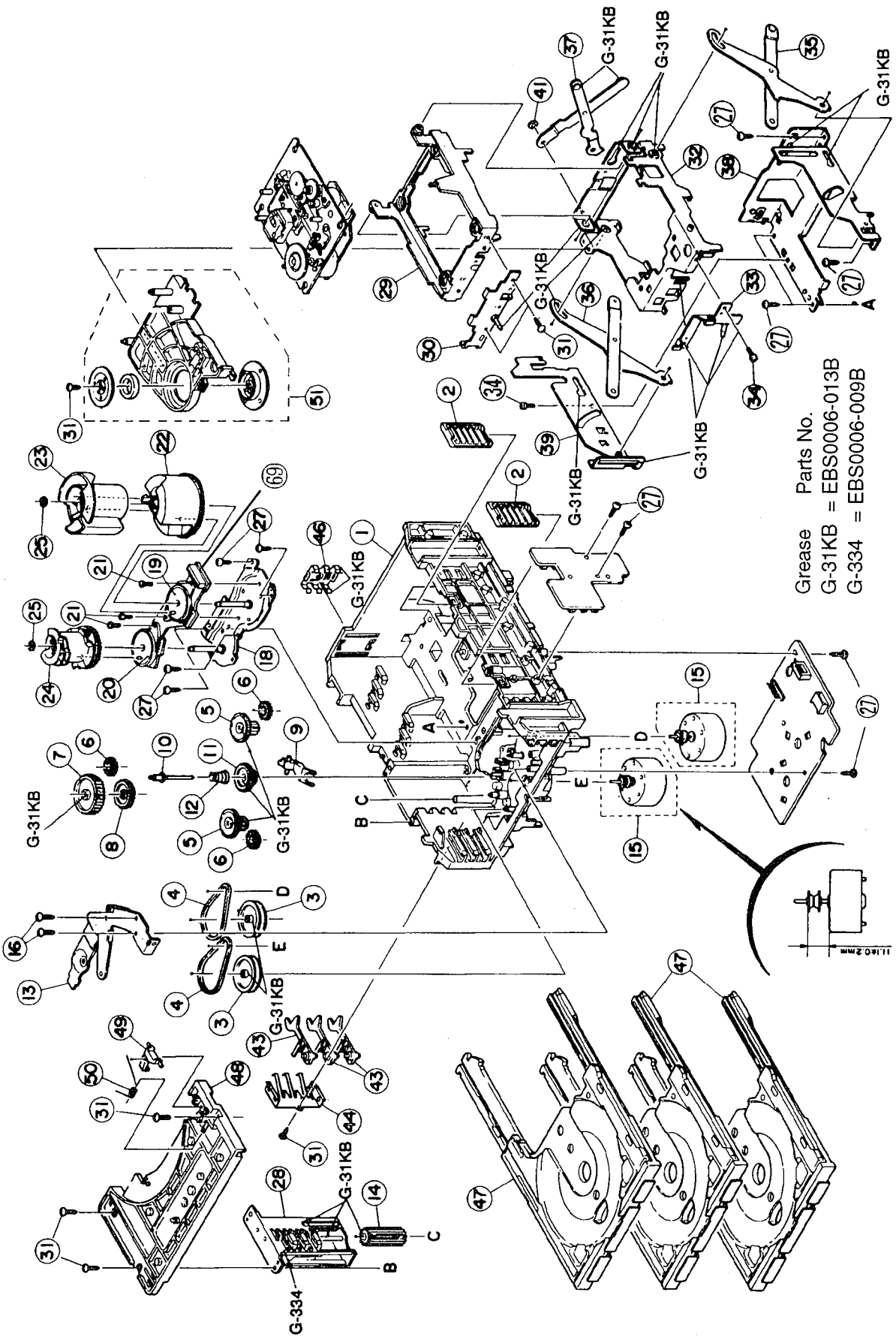
Block No. M 6 M M

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	51	LE20228-001A	LOWER FITTING	1		
	52	LE20230-001A	CENTER FITTING	1		
	53	LE20232-001A	UPPER FITTING	1		
	54	E309765-006SM	VOLUME KNOB	3		
	55	E409229-006SM	VOLUME KNOB	1		
	56	SDSF3006Z	SCREW	1		
	57	E209067-002SM	WINDOW SCREEN	1		
	58	E206967-006SM	METAL COVER	1		
	59	E406308-003	SPECIAL SCREW	4		
	60	LE20222-001A	SHUTTLE COVER	1		
	61	LE20225-003AKP	P.BUTTON ASSY	1		
	62	VKS2250-003	TOP BRACKET	1		
	63	SBSG2608Z	SCREW	3		
	64	E406507-001	CAUTION LABEL	1		
	-	LE40210-001A	CAUTION LABEL	1		UT

CD Changer Mechanism Ass'y and Parts List

■ Grease Point

Block No. M 2 M M



■ Parts List (Changer Mechanism Ass'y)

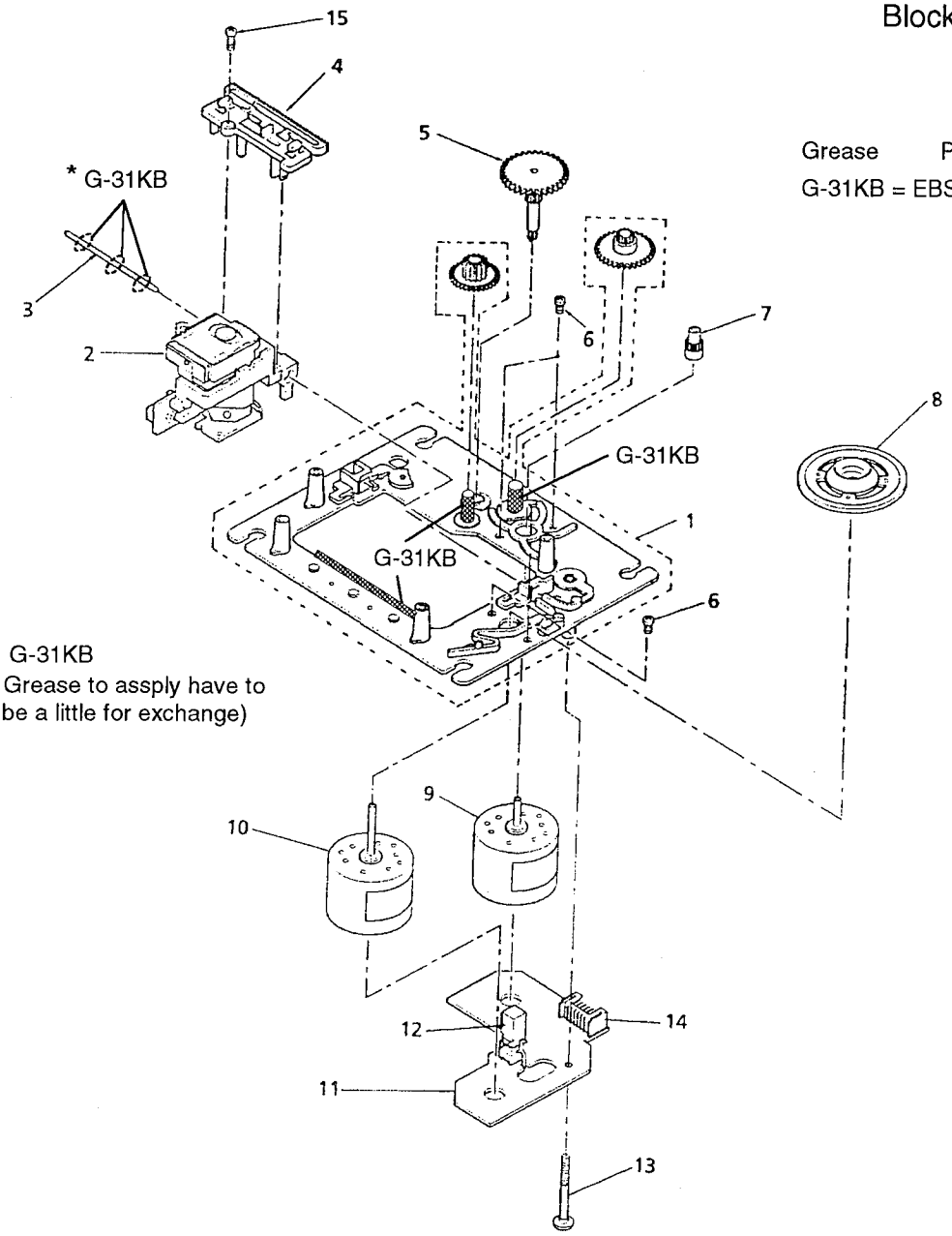
Block No. M 2 M M

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	VKS1144-003	CHASSIS BASE	1		
	2	VKS3698-003	TRAY GUIDE	2		
	3	VKS5532-003	PULLEY GEAR	2		
	4	VKB3000-164	DRIVE BELT	2		
	5	VKS5505-003	GEAR B	2		
	6	VKS5506-002	GEAR C	3		
	7	VKS5507-002	CROSS GEAR U	1		
	8	VKS5508-002	CROSS GEAR L	1		
	9	VKS5510-003	SELECT LEVER	1		
	10	VKH5769-001	GEAR STUD	1		
	11	VKS5511-002	SELECT GEAR	1		
	12	VKW5155-003	COMPRESS SPRING	1		
	13	VKM3846-002	GEAR BRACKET	1		
	14	VKS5509-002MM	CYLINDER GEAR	1		
	15	MSN5D257A-SA2	DC MOTOR	1		
	16	DPSP2616Z	SCREW	2		
	18	VKM3825-00A	CAM GEAR ASSY	1		
	19	VKZ3172-00A	CAM SW. R ASS'Y	1		
	20	VKZ3173-00A	CAM SW. L ASS'Y	1		
	21	SPST2606Z	TAPPING SCREW	1		
	22	VKS2263-002MM	CAM R1	1		
	23	VKS2264-002MM	CAM R2	1		
	24	VKS2265-002MM	CAM GEAR L	1		
	25	WDL316050	SLIT WASHER	2		
	27	SBSF2608Z	TAPPING SCREW	15		
	28	VKS3702-00FMM	DRIVE UNIT	1		
	29	VKS2247-004	MECHA HOLDER A	1		
	30	VKL7767-00B	MECHABRACKET	1		
	31	SBSF2606Z	TAPPING SCREW	3		
	32	VKM3860-00A	MECHA HOLDER ASSY	1		
	33	VKL7802-00C	MECHA HOLDER ASSY	1		
	34	SDST2604Z	SCREW	3		
	35	VKL7810-00A	LIFTER	1		
	36	VKL7811-00A	LIFTER	1		
	37	VKL7812-00A	LIFTER	1		
	38	VKL2732-002	LIFTER BASE	1		
	39	VKM3823-001	LIFTER BRACKET	1		
	40	SDST2604Z	SCREW	1		
	41	WDL266035-2	SLIT WASHER	1		
	43	VKS5514-002MM	LOCK LEVER	3		
	44	VKY3133-002MM	RETURN SPRING	1		
	46	VKY3134-003	CLICK SPRING	1		
	47	VKS2252-00DMM	TRAY ASS'Y	3		
	48	VKS2250-003	TOP BRACKET	1		
	49	VKS5515-002	S.TRAY STOPPER	1		
	50	VKW5156-004	TORSION SPRING	1		
	51	VKS3703-00DMM	CLAMPER ASS'Y	1		
	69	VMC0325-010	CONNECTOR	1		

CD Mechanism Ass'y and Parts List

■ Grease Point

Block No. M 3 M M



Grease Parts No.
G-31KB = EBS0006-013B

■ Parts List (CD Mechanism Ass'y)

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	EPB-002PK	MECHA. BASE ASSY	1		
	2	OPTIMA-150S	OPTICAL PICK UP	1		
	3	E406777-001	CD SHAFT	1		
	4	E307746-001	CD RACK	1		
	5	E307745-221SS	MECHA GEAR	1		
	6	SDSP2003N	SCREW	3		
	7	E406750-001	PINION GEAR	1		
	8	EPB309173A	TURN TABLE	1		
	9	E406784-001	FEED MOTOR	1		
	10	E406783-001	SPINDLE MOTOR	1		
	11	EMW10190-001(S)	P.C.BOARD	1		
	12	ESB1100-005	LEAF SWITCH	1		
	13	E75832-001	SCREW	1		
	14	EMV5109-006B	CONN. TERMINAL	1	6PIN	
	15	SDSF2006Z	SCREW	1		

■ Electrical Parts List (ENN-487)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC601	AN8806SB	I.C(MONO-ANALOG)	
	IC602	BA6897FPW	I.C(MONO-ANALOG)	
	IC603	MN662720RB	I.C(DIGI-MOS)	
		TRANSISTORS		
	Q601	2SA950(O,Y)	SI.TRANSISTOR	
		CAPACITORS		
	C602	QCZ0205-155	1.5MF 25V C.CAP.	
	C604	QETC1AM-107ZN	100MF 10V E.CAP.	
	C605	QETB1HM-106	10MF 50V E.CAP.	
	C606	QCGB1HK-102	1000PF 50V CER.CAP.	
	C607	QCGB1HK-102	1000PF 50V CER.CAP.	
	C608	QETB1HM-105	1MF 50V AL E.CAP.	
	C609	QCBB1HK-101Y	100PF 50V CER.CAP.	
	C610	QFV81HJ-273	0.027MF 50V THIN FILM CAP.	
	C611	QCXB1CM-472Y	4700PF 16V CER.CAP.	
	C612	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C613	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C614	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C615	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C616	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C617	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C618	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C619	QCBB1HK-271Y	270PF 50V CER.CAP.	
	C620	QCSB1HJ-470	47PF 50V CER.CAP.	
	C621	QCGB1HK-102	1000PF 50V CER.CAP.	
	C622	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C623	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C624	QCBB1HK-331Y	330PF 50V CER.CAP.	
	C625	QETC1AM-107ZN	100MF 10V E.CAP.	
	C626	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C631	QETN1EM-106Z	10MF 25V E.CAP.	
	C632	QETC1AM-107ZN	100MF 10V E.CAP.	
	C641	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C642	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C653	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C656	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C661	QCBB1HK-471Y	470PF 50V CER.CAP.	
	C662	QCZ0202-155	1.5MF 25V CER.RES.	
	C663	QFV81HJ-223	0.022MF 50V THIN FILM CAP.	
	C664	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C665	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C673	QER51AM-227	220MF 10V AL E.CAP.	
	C674	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C677	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C678	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
		RESISTORS		
	R601	QRD161J-123	12K 1/6W CARBON RES.	
	R602	QRD161J-102	1K 1/6W CARBON RES.	
	R603	QRD167J-560	56 1/6W CARBON RES.	
	R604	QRD161J-2R2	2.2 1/6W CARBON RES.	
	R605	QRD161J-274	270K 1/6W CARBON RES.	
	R606	QRD167J-154	150K 1/6W CARBON RES.	
	R607	QRD161J-273	27K 1/6W CARBON RES.	
	R609	QRD161J-114	110K 1/6W CARBON RES.	
	R610	QRD161J-104	100K 1/6W CARBON RES.	
	R612	QRD167J-822	8.2K 1/6W CARBON RES.	
	R613	QRD167J-121	120 1/6W CARBON RES.	
	R614	QRD161J-100	10 1/6W CARBON RES.	
	R615	QRD161J-120	12 1/6W CARBON RES.	
	R616	QRD161J-910Y	91 1/6W CARBON RES.	
	R617	QRD161J-125	1.2M 1/6W CARBON RES.	
	R618	QRD161J-473	47K 1/6W CARBON RES.	
	R641	QRD161J-683	68K 1/6W CARBON RES.	
	R642	QRD161J-222	2.2K 1/6W CARBON RES.	
	R643	QRD167J-822	8.2K 1/6W CARBON RES.	
	R644	QRD167J-223	22K 1/6W CARBON RES.	
	R645	QRD167J-223	22K 1/6W CARBON RES.	
	R646	QRD161J-222	2.2K 1/6W CARBON RES.	
	R647	QRD161J-472	4.7K 1/6W CARBON RES.	

⚠	Item	Parts Number	Description	Area
	R648	QRD161J-182	1.8K 1/6W CARBON RES.	
	R651	QRD161J-102	1K 1/6W CARBON RES.	
	R652	QRD161J-102	1K 1/6W CARBON RES.	
	R653	QRD161J-102	1K 1/6W CARBON RES.	
	R654	QRD161J-102	1K 1/6W CARBON RES.	
	R655	QRD161J-102	1K 1/6W CARBON RES.	
	R661	QRD161J-683	68K 1/6W CARBON RES.	
	R662	QRD167J-155	1.5M 1/6W CARBON RES.	
	R663	QRD161J-124	120K 1/6W CARBON RES.	
	R664	QRD161J-471	470 1/6W CARBON RES.	
	R666	QRD161J-102	1K 1/6W CARBON RES.	
	R671	QRD161J-101	100 1/6W CARBON RES.	
	R672	QRD161J-102	1K 1/6W CARBON RES.	
	R673	QRD161J-102	1K 1/6W CARBON RES.	
	R674	QRD161J-102	1K 1/6W CARBON RES.	
	R692	QRD161J-101	100 1/6W CARBON RES.	
	R693	QRD161J-101	100 1/6W CARBON RES.	
	R694	QRD161J-101	100 1/6W CARBON RES.	
		OTHERS		
		EMW10675-003	PRINTED BOARD	
	CN601	EMV7144-015R	CONNECT TERMINAL	
	CN602	EMV5109-006A	CONNECT TERMINAL	
	CN607	VMC0163-R23	CONNECT TERMINAL	
	CN611	QMV5005-002K	CONNECT TERMINAL	
	FW603	EWR34D-13LS	FLAT WIRE	
	SP601	VYH7237-001	I.C.COVER	
	SP602	VYH7237-003	I.C.COVER	
	SP603	VYH7237-003	I.C.COVER	
	TW601	EWF102-047	TERMINAL WIRE	

■ Electrical Parts List (ENN-498)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC101	PQ1CF2	I.C(M)	
	IC102	PQ30RV1	I.C(MONO-ANALOG)	
	IC201	HD6433726SD36F	I.C.	
	IC701	NJM4580DD	I.C(MONO-ANALOG)	
	IC901	GP1U271X	INFRARED DETECT UNIT	
	IC921	NJM4580DD	I.C(MONO-ANALOG)	
	IC922	NJM4580DD	I.C(MONO-ANALOG)	
	IC961	NJM4580L	I.C(MONO-ANALOG)	
		DIODES		
	D101	1SR35-100	SI.DIODE	
	D102	1SR35-100	SI.DIODE	
	D103	1SR35-100	SI.DIODE	
	D104	MTZ27JC	ZENER DIODE	
	D111	S3V20F	SI.DIODE	
	D112	S3V20F	SI.DIODE	
	D116	1SR139-200	SI.DIODE	
	D117	1SR139-200	SI.DIODE	
	D121	1SS133	SI.DIODE	
	D122	1SS133	SI.DIODE	
	D131	1SR139-200	SI.DIODE	
	D132	1SR139-200	SI.DIODE	
	D133	1SR139-200	SI.DIODE	
	D134	1SR139-200	SI.DIODE	
	D135	11DF2FD	SI.DIODE	
	D136	MTZ5.6JC	ZENER DIODE	
	D139	MTZ6.2JC	ZENER DIODE	
	D140	1SS119	SI.DIODE	
	D201	1SS133	SI.DIODE	
	D202	1SS133	SI.DIODE	
	D203	1SS133	SI.DIODE	
	D204	MTZ5.1JC	ZENER DIODE	
	D205	1SS119	SI.DIODE	
	D206	1SS119	SI.DIODE	
	D207	1SS119	SI.DIODE	
	D208	1SS133	SI.DIODE	
	D209	1SS133	SI.DIODE	
	D211	1SS133	SI.DIODE	
	D212	1SS133	SI.DIODE	
	D213	1SS119	SI.DIODE	
	D214	1SS119	SI.DIODE	
	D901	1SS133	SI.DIODE	
	D902	1SS133	SI.DIODE	
	D903	1SS133	SI.DIODE	
	D904	1SS133	SI.DIODE	
	D905	1SS133	SI.DIODE	
	D906	1SS133	SI.DIODE	
	D907	1SS133	SI.DIODE	
	D908	1SS133	SI.DIODE	
	D921	SLR-342MCA47	L.E.D.	
	D922	SLR-342MCA47	L.E.D.	
	D923	SLR-342MCA47	L.E.D.	
	D924	SLR-342MCA47	L.E.D.	
	D925	SLR-342MCA47	L.E.D.	
	D926	SLR-342MCA47	L.E.D.	
	D951	SLR-342VC3F	L.E.D.	
	D953	1SS133	SI.DIODE	
	D954	1SS133	SI.DIODE	
	D955	SLR-342MCA47	L.E.D.	
	D956	SLR-342MCA47	L.E.D.	
	D957	SLR-342MCA47	L.E.D.	
	D958	SLR-342MCA47	L.E.D.	
	D959	SLR-342MCA47	L.E.D.	
	D960	SLR-342MCA47	L.E.D.	
	D961	SLR-342MCA47	L.E.D.	
	D962	SLR-342MCA47	L.E.D.	
	D963	SLR-342VC3F	L.E.D.	
	D965	SLR-342MCA47	L.E.D.	
	D966	SLR-342MCA47	L.E.D.	
	D967	SLR-342MCA47	L.E.D.	
	D968	SLR-342MCA47	L.E.D.	
	D970	MTZ3.9JB	ZENER DIODE	
	D971	MTZ3.9JB	ZENER DIODE	

⚠	Item	Parts Number	Description	Area
	D972	MTZ3.9JB	ZENER DIODE	
		TRANSISTORS		
	Q101	DTA114YS	DIGITAL TRANSISTOR	
	Q102	2SD2144S(VW)	SI.TRANSISTOR	
	Q103	2SD2144S(VW)	SI.TRANSISTOR	
	Q106	2SB1357(E,F)	SI.TRANSISTOR	
	Q121	2SA933S(RS)	SI.TRANSISTOR	
	Q122	DTC114YS	DIGITAL TRANSISTOR	
	Q124	DTC124ES	DIGITAL TRANSISTOR	
	Q125	2SB1357(E,F)	SI.TRANSISTOR	
	Q126	2SD1302	SI.TRANSISTOR	
	Q201	DTC114YS	DIGITAL TRANSISTOR	
	Q202	DTC114YS	DIGITAL TRANSISTOR	
	Q203	DTC114YS	DIGITAL TRANSISTOR	
	Q204	DTC114YS	DIGITAL TRANSISTOR	
	Q205	DTC114YS	DIGITAL TRANSISTOR	
	Q211	DTC114YS	DIGITAL TRANSISTOR	
	Q212	DTC114YS	DIGITAL TRANSISTOR	
	Q213	DTC114YS	DIGITAL TRANSISTOR	
	Q951	DTC114YS	DIGITAL TRANSISTOR	
	Q954	DTC114YS	DIGITAL TRANSISTOR	
	Q955	DTA114YS	DIGITAL TRANSISTOR	
		CAPACITORS		
	C101	QETB1EM-477E	470MF 25V E.CAP.	
	C102	QETN1JM-227Z	220MF 63V ELECTRO	
	C103	QETB1HM-475E	4.7MF 50V E.CAP.	
	C104	QETB1HM-477	470MF 50V AL E.CAP.	
	C106	QCF21HP-473A	0.047MF 50V CER.CAP.	
	C111	QFV81HJ-473	0.047MF 50V THIN FILM CAP.	
	C112	QFV81HJ-473	0.047MF 50V THIN FILM CAP.	
	C113	QETB1EM-478E	4700MF 25V E.CAP.	
	C114	QFV81HJ-333	0.033MF 50V THIN FILM CAP.	
	C116	QETB1HM-474	0.47MF 50V E.CAP.	
	C119	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C121	QETB1EM-226N	22MF 25V E.CAP.	
	C122	QETC1EM-227ZN	220MF 25V AL E.CAP.	
	C126	QETN1EM-106Z	10MF 25V E.CAP.	
	C133	QETB1EM-108	1000MF 25V AL E.CAP.	
	C134	QETB1EM-108	1000MF 25V AL E.CAP.	
	C135	QFV82AJ-104	0.1MF 100V THIN FILM CAP.	
	C143	QETB1EM-477E	470MF 25V E.CAP.	
	C145	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C151	QCZ0205-155	1.5MF 25V C.CAP.	
	C154	QFV81HJ-104	0.1MF 50V THIN FILM CAP.	
	C155	QETB0JM-108N	1000MF 6.3V E.CAP.	
	C156	QETM0JM-338	3300MF 6.3V E.CAP.	
	C159	QETB1CM-107	100MF 16V AL E.CAP.	
	C160	QETB0JM-477	470MF 6.3V AL E.CAP.	
	C163	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C201	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C203	QCZ0205-155	1.5MF 25V C.CAP.	
	C204	QETC1AM-107ZN	100MF 10V E.CAP.	
	C222	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C223	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C224	QFN31HJ-473ZN	0.047MF 50V MYLAR CAP.	
	C225	QETB1HM-225	2.2MF 50V AL E.CAP.	
	C226	QETB1HM-105	1MF 50V AL E.CAP.	
	C227	QEAD0HZ-479ZM	47000MF E.CAP.	
	C228	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C229	QETC1AM-107ZN	100MF 10V E.CAP.	
	C230	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C701	EETB1HM-475E	4.7MF 50V E.CAP.	
	C702	EETB1HM-475E	4.7MF 50V E.CAP.	
	C717	QETB1EM-107	100MF 25V AL E.CAP.	
	C718	QETB1EM-107	100MF 25V AL E.CAP.	
	C901	QER51HM-475	4.7MF 50V AL E.CAP.	
	C902	QER51HM-475	4.7MF 50V AL E.CAP.	
	C903	QER50JM-476	47MF 6.3V AL E.CAP.	
	C904	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C921	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C922	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C923	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C924	QETB1HM-105	1MF 50V AL E.CAP.	

■ Electrical Parts List (ENN-498)

⚠	Item	Parts Number	Description	Area
	C925	QETB1HM-105	1MF 50V AL E.CAP.	
	C926	QETB1HM-105	1MF 50V AL E.CAP.	
	C927	QCBB1HK-561Y	560PF 50V CER.CAP.	
	C928	QCBB1HK-561Y	560PF 50V CER.CAP.	
	C929	QCBB1HK-561Y	560PF 50V CER.CAP.	
	C933	QCSB1HJ-220	22PF 50V CER.CAP.	
	C934	QCSB1HJ-220	22PF 50V CER.CAP.	
	C935	QCSB1HJ-220	22PF 50V CER.CAP.	
	C936	QETB1HM-474	0.47MF 50V E.CAP.	
	C937	QETB1HM-474	0.47MF 50V E.CAP.	
	C938	QETB1HM-105	1MF 50V AL E.CAP.	
	C941	QETB1CM-476	47MF 16V AL E.CAP.	
	C942	QETB1CM-476	47MF 16V AL E.CAP.	
	C946	QCF21HP-473A	0.047MF 50V CER.CAP.	
	C947	QCF21HP-473A	0.047MF 50V CER.CAP.	
	C949	QCF21HP-223A	0.022MF 50V CER.CAP.	
	C961	QER61HM-105Z	1MF 50V AL E.CAP.	
	C962	QCBB1HK-820Y	82PF 50V CER.CAP.	
	C971	QER51CM-226	22MF 16V AL E.CAP.	
	C972	QER51CM-226	22MF 16V AL E.CAP.	
	C984	QCS21HJ-271A	270PF 50V CER.CAP.	
	C985	QCY31HK-103Z	0.01MF 50V CER.CAP.	
	C986	QCY31HK-103Z	0.01MF 50V CER.CAP.	
	C987	QCF21HP-103A	0.01MF 50V CER.CAP.	
		RESISTORS		
	R101	QRD167J-562	5.6K 1/6W CARBON RES.	
	R102	QRD167J-562	5.6K 1/6W CARBON RES.	
	R103	QRD167J-751	750 1/6W CARBON RES.	
	R107	QRD167J-751	750 1/6W CARBON RES.	
⚠	R111	QRZ0077-560	56 1/4W FUSIBLE RES.	
	R112	QRD161J-472	4.7K 1/6W CARBON RES.	
	R113	QRD167J-121	120 1/6W CARBON RES.	
	R114	QRD161J-473	47K 1/6W CARBON RES.	
	R118	QRD161J-752	7.5K 1/6W CARBON RES.	
	R120	QRD161J-393	39K 1/6W CARBON RES.	
	R121	QRD161J-183	18K 1/6W CARBON RES.	
	R122	QRD161J-273	27K 1/6W CARBON RES.	
	R123	QRD161J-221	220 1/6W CARBON RES.	
	R124	QRD161J-331	330 1/6W CARBON RES.	
	R125	QRD161J-183	18K 1/6W CARBON RES.	
	R127	QRD161J-472	4.7K 1/6W CARBON RES.	
	R144	QRD161J-102	1K 1/6W CARBON RES.	
	R148	QRD161J-302	3K 1/6W CARBON RES.	
	R149	QRD167J-152	1.5K 1/6W CARBON RES.	
	R150	QRD161J-561	560 1/6W CARBON RES.	
	R152	QRD161J-101	100 1/6W CARBON RES.	
	R153	QRD161J-222	2.2K 1/6W CARBON RES.	
	R154	QRG01DJ-100X	10 1W OXIDE METAL	
	R155	QRD161J-221	220 1/6W CARBON RES.	
	R156	QRD161J-221	220 1/6W CARBON RES.	
	R157	QRD161J-182	1.8K 1/6W CARBON RES.	
	R202	QRD161J-105	1M 1/6W CARBON RES.	
	R204	QRD161J-472	4.7K 1/6W CARBON RES.	
	R217	QRD161J-103	10K 1/6W CARBON RES.	
	R218	QRD161J-103	10K 1/6W CARBON RES.	
	R221	QRD161J-103	10K 1/6W CARBON RES.	
	R225	QRD161J-103	10K 1/6W CARBON RES.	
	R226	QRD161J-472	4.7K 1/6W CARBON RES.	
	R231	QRD161J-101	100 1/6W CARBON RES.	
	R232	QRD161J-391	390 1/6W CARBON RES.	
	R233	QRD161J-821	820 1/6W CARBON RES.	
	R235	QRD161J-102	1K 1/6W CARBON RES.	
	R238	QRD161J-470	47 1/6W CARBON RES.	
	R239	QRD161J-470	47 1/6W CARBON RES.	
	R240	QRD161J-470	47 1/6W CARBON RES.	
	R241	QRD161J-750	75 1/6W CARBON RES.	
	R242	QRD161J-750	75 1/6W CARBON RES.	
	R243	QRD161J-221	220 1/6W CARBON RES.	
	R247	QRD161J-103	10K 1/6W CARBON RES.	
	R248	QRD161J-103	10K 1/6W CARBON RES.	
	R249	QRD161J-102	1K 1/6W CARBON RES.	
	R250	QRD161J-104	100K 1/6W CARBON RES.	
	R251	QRD161J-103	10K 1/6W CARBON RES.	

⚠	Item	Parts Number	Description	Area
	R252	QRD161J-103	10K 1/6W CARBON RES.	
	R253	QRD161J-102	1K 1/6W CARBON RES.	
	R254	QRD161J-222	2.2K 1/6W CARBON RES.	
	R703	QRD161J-473	47K 1/6W CARBON RES.	
	R704	QRD161J-473	47K 1/6W CARBON RES.	
	R705	QRD161J-103	10K 1/6W CARBON RES.	
	R706	QRD161J-103	10K 1/6W CARBON RES.	
	R711	QRD167J-151	150 1/6W CARBON RES.	
	R712	QRD167J-151	150 1/6W CARBON RES.	
	R713	QRD161J-331	330 1/6W CARBON RES.	
	R715	QRD161J-331	330 1/6W CARBON RES.	
	R721	QRD161J-472	4.7K 1/6W CARBON RES.	
	R921	QRD161J-473	47K 1/6W CARBON RES.	
	R922	QRD161J-473	47K 1/6W CARBON RES.	
	R923	QRD161J-473	47K 1/6W CARBON RES.	
	R924	QRD161J-103	10K 1/6W CARBON RES.	
	R925	QRD161J-103	10K 1/6W CARBON RES.	
	R926	QRD161J-103	10K 1/6W CARBON RES.	
	R927	QRD161J-102	1K 1/6W CARBON RES.	
	R928	QRD161J-102	1K 1/6W CARBON RES.	
	R929	QRD161J-102	1K 1/6W CARBON RES.	
	R930	QRD161J-561	560 1/6W CARBON RES.	
	R931	QRD161J-561	560 1/6W CARBON RES.	
	R932	QRD161J-561	560 1/6W CARBON RES.	
	R933	QRD167J-223	22K 1/6W CARBON RES.	
	R934	QRD167J-223	22K 1/6W CARBON RES.	
	R935	QRD167J-223	22K 1/6W CARBON RES.	
	R936	QRD161J-471	470 1/6W CARBON RES.	
	R937	QRD161J-471	470 1/6W CARBON RES.	
	R938	QRD161J-181	180 1/6W CARBON RES.	
	R946	QRD161J-331	330 1/6W CARBON RES.	
	R947	QRD161J-331	330 1/6W CARBON RES.	
	R951	QRD161J-471	470 1/6W CARBON RES.	
	R954	QRD161J-821	820 1/6W CARBON RES.	
	R955	QRD161J-471	470 1/6W CARBON RES.	
	R956	QRD161J-471	470 1/6W CARBON RES.	
	R957	QRD161J-621	620 1/6W CARBON RES.	
	R958	QRD161J-112	1.1K 1/6W CARBON RES.	
	R959	QRD161J-222	2.2K 1/6W CARBON RES.	
	R960	QRD167J-682	6.8K 1/6W CARBON RES.	
	R961	QRD161J-182	1.8K 1/6W CARBON RES.	
	R962	QRD167J-272	2.7K 1/6W CARBON RES.	
	R963	QRD161J-123	12K 1/6W CARBON RES.	
	R964	QRD161J-123	12K 1/6W CARBON RES.	
	R965	QRD167J-562	5.6K 1/6W CARBON RES.	
	R967	QRD161J-913	91K 1/6W CARBON RES.	
	R972	QRD167J-511	510 1/6W CARBON RES.	
	R973	QRD167J-511	510 1/6W CARBON RES.	
	R974	QRD161J-472	4.7K 1/6W CARBON RES.	
	RA201	QRB045J-472	4.7K 1/8W NETWORK RES.	
	VR961	QVQ0006-B14	10K VARIABLE RES.	
	VR962	QVQ0006-B14	10K VARIABLE RES.	
	VR963	QVQ0006-B14	10K VARIABLE RES.	
	VR964	QVQ0006-B14	10K VARIABLE RES.	
		OTHERS		
		EMW10721-003	PRINTED BOARD	
		E3400-431	FELT SPACER	
		SBSG3008CC	TAPPING SCREW	
	J921	QMS6A70-E21H	HEADPHONE JACK	
	J922	QMS3L38-E20S	PIN JACK	
	J923	QMS6A60-E31H	MICROPHONE JACK	
	J924	QMS6A60-E31H	MICROPHONE JACK	
	J925	QMS6A60-E31H	MICROPHONE JACK	
	L101	EQL6003-101U	INDUCTOR	
	L102	EQL6003-101U	INDUCTOR	
	S701	QSS1A13-E01	SLIDE SWITCH	
	S901	ESP0001-023M	TACT SWITCH	
	S902	ESP0001-023M	TACT SWITCH	
	S903	ESP0001-023M	TACT SWITCH	
	S904	ESP0001-023M	TACT SWITCH	
	S905	ESP0001-023M	TACT SWITCH	
	S906	ESP0001-023M	TACT SWITCH	
	S907	ESP0001-023M	TACT SWITCH	

■ Electrical Parts List (ENN-498)

⚠	Item	Parts Number	Description	Area
	S908	ESP0001-023M	TACT SWITCH	
	S909	ESP0001-023M	TACT SWITCH	
	S910	ESP0001-023M	TACT SWITCH	
	S911	ESP0001-023M	TACT SWITCH	
	S912	ESP0001-023M	TACT SWITCH	
	S913	ESP0001-023M	TACT SWITCH	
	S914	ESP0001-023M	TACT SWITCH	
	S915	ESP0001-023M	TACT SWITCH	
	S916	ESP0001-023M	TACT SWITCH	
	S917	ESP0001-023M	TACT SWITCH	
	S918	ESP0001-023M	TACT SWITCH	
	S919	ESP0001-023M	TACT SWITCH	
	S920	ESP0001-023M	TACT SWITCH	
	S921	ESP0001-023M	TACT SWITCH	
	S922	ESP0001-023M	TACT SWITCH	
	S923	ESP0001-023M	TACT SWITCH	
	S924	ESP0001-023M	TACT SWITCH	
	S925	ESP0001-023M	TACT SWITCH	
	S926	ESP0001-023M	TACT SWITCH	
	S930	QSW0546-001	SLIDE SWITCH	
	S931	ESP0001-023M	TACT SWITCH	
	S932	ESP0001-023M	TACT SWITCH	
	S933	ESP0001-023M	TACT SWITCH	
	S934	ESP0001-023M	TACT SWITCH	
	S935	ESP0001-023M	TACT SWITCH	
	S936	ESP0001-023M	TACT SWITCH	
	S937	QSS4005-E01	SLIDE SWITCH	
	S940	ESP0001-023M	TACT SWITCH	
	S941	ESP0001-023M	TACT SWITCH	
	X201	ECX0008-000KMZ	CRYSTAL	
	BK001	E409182-001SM	EARTH TERMINAL	
	CN101	EMV7145-005Z	SOCKET ASSY	
	CN201	VMC0163-031	FFC SOCKET	
	CN202	VMC0163-021	CONNECT TERMINAL	
	CN203	EMV5109-006A	CONNECT TERMINAL	
	CN211	VMC0163-023	CONNECT TERMINAL	
	CN213	EMV7145-004Z	SOCKET ASSY	
	CN214	VMC0163-010	AC CONNECTOR	
	CN221	EMV7163-012	CONNECT TERMINAL	
	CN223	EMV7163-010	CONNECT TERMINAL	
	CN501	EMV7171-115	CONNECT TERMINAL	
	CN502	EWS26C-A210J	SOCKET WIRE ASSY	
	CN503	EWS266-A225J	SOCKET WIRE ASSY	
	CN901	EMV7160-031	CONNECT TERMINAL	
	CN951	VMC0163-R21	CONNECT TERMINAL	
	CN961	EWS266-A413	SOCKET WIRE ASSY	
⚠	CP112	ICP-N15	I.C.PROTECTOR	
	DI901	ELU0001-212	FLUORESCENT DISPLAY TUBE	
	EP921	E406523-001SM	EARTH BRACKET	
	FH901	E308192-001	FL HOLDER	
	FS901	E306805-014	FELT SPACER	
	FW224	EWR33D-25LS	FLAT WIRE	
	FW921	EWR36D-13LS	CORD	
	FW922	EWR37D-13LS	CORD	
	FW951	EWR33D-08SS	FLAT WIRE	
	HS001	E70306-001	HEAT SINK	
	JT921	EMV7145-003Z	SOCKET ASSY	
	JT922	EMV7145-003Z	SOCKET ASSY	
	JT923	EMV7145-004Z	SOCKET ASSY	
	JT924	EMV7145-003Z	SOCKET ASSY	
	SP201	VYH7653-001	LEAF SPRING	

■ Electrical Parts List (ENN-499)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC301	TC9409BF-000	I.C(M)	
	IC501	MN35503	I.C(DIGI-MOS)	
	IC502	NJM4580DD	I.C(MONO-ANALOG)	
	IC503	NJM4580DD	I.C(MONO-ANALOG)	
	IC504	AN7395S-W	I.C(M)	
	IC505	NJM78L09A-T	I.C(M)	
		DIODES		
	D571	MTZ6.8JC	ZENER DIODE	
		TRANSISTORS		
	Q551	2SD1302	SI.TRANSISTOR	
	Q552	2SD1302	SI.TRANSISTOR	
	Q553	DTC114YS	DIGITAL TRANSISTOR	
	Q554	DTC114YS	DIGITAL TRANSISTOR	
		CAPACITORS		
	C302	QETB0JM-227	220MF 6.3V E.CAP.	
	C303	QETC1AM-107ZN	100MF 10V E.CAP.	
	C304	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C306	QETB1HM-475E	4.7MF 50V E.CAP.	
	C307	QFN81HJ-222	2200PF 50V METAL.MYLAR	
	C308	QCBB1HK-681Y	680PF 50V CER.CAP.	
	C309	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C310	QETC1AM-107ZN	100MF 10V E.CAP.	
	C311	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C316	QCZ0205-155	1.5MF 25V C.CAP.	
	C317	QETB0JM-227	220MF 6.3V E.CAP.	
	C318	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C319	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C321	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C323	QCZ0205-155	1.5MF 25V C.CAP.	
	C324	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C355	QETC1AM-107ZN	100MF 10V E.CAP.	
	C360	QCGB1HK-102	1000PF 50V CER.CAP.	
	C501	QCZ0205-155	1.5MF 25V C.CAP.	
	C502	QETB0JM-227	220MF 6.3V E.CAP.	
	C503	QETB1HM-475E	4.7MF 50V E.CAP.	
	C505	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C506	QETB0JM-477	470MF 6.3V AL E.CAP.	
	C507	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C508	QCT30CH-180Y	18PF 50V CER.CAP.	
	C509	QCT30CH-180Y	18PF 50V CER.CAP.	
	C510	QETC1AM-476ZM	47MF 10V E.CAP.	
	C511	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C512	QCHB1EZ-223	0.022MF 25V CER.CAP.	
	C521	QFN31HJ-392Z	3900PF 50V MYLAR CAP.	
	C522	QFN31HJ-392Z	3900PF 50V MYLAR CAP.	
	C523	QFN31HJ-333Z	0.033MF 50V MYLAR CAP.	
	C524	QFN31HJ-333Z	0.033MF 50V MYLAR CAP.	
	C525	QCBB1HK-181Y	180PF 50V CER.CAP.	
	C526	QCBB1HK-181Y	180PF 50V CER.CAP.	
	C527	QETB1EM-107	100MF 25V AL E.CAP.	
	C528	QETB1EM-107	100MF 25V AL E.CAP.	
	C531	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C532	QCBB1HK-221Y	220PF 50V CER.CAP.	
	C533	QETB1EM-107	100MF 25V AL E.CAP.	
	C534	QETB1EM-107	100MF 25V AL E.CAP.	
	C537	EETB1HM-476E	47MF 50V E.CAP.	
	C538	EETB1HM-476E	47MF 50V E.CAP.	
	C539	QFN31HJ-152Z	1500PF 50V MYLAR CAP.	
	C540	QFN31HJ-152Z	1500PF 50V MYLAR CAP.	
	C551	QETB1HM-106	10MF 50V E.CAP.	
	C552	QETB1HM-106	10MF 50V E.CAP.	
	C553	QETB1HM-106	10MF 50V E.CAP.	
	C554	QETB1HM-106	10MF 50V E.CAP.	
	C555	QETB1HM-106	10MF 50V E.CAP.	
	C556	QETB1HM-106	10MF 50V E.CAP.	
	C557	QETB1AM-227	220MF 10V E.CAP.	
	C558	QETB1HM-475E	4.7MF 50V E.CAP.	
	C559	QETB1HM-226E	22MF 50V E.CAP.	
	C560	QETC1AM-107ZN	100MF 10V E.CAP.	

⚠	Item	Parts Number	Description	Area
	C561	QETB1HM-475E	4.7MF 50V E.CAP.	
	C562	QCZ0205-155	1.5MF 25V C.CAP.	
	C563	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
	C564	QFN31HJ-273Z	0.027MF 50V MYLAR CAP.	
	C565	QFN81HJ-393	0.039MF 50V METAL.MYLAR	
	C566	QFN31HJ-563Z	0.056MF 50V MYLAR CAP.	
	C571	QETC0JM-477ZM	470MF 6.3V E.CAP.	
	C574	QCS21HJ-680A	68PF 50V CER.CAP.	
	C575	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
		RESISTORS		
	R234	QRD161J-183	18K 1/6W CARBON RES.	
	R303	QRD161J-103	10K 1/6W CARBON RES.	
	R304	QRD161J-103	10K 1/6W CARBON RES.	
	R305	QRD161J-103	10K 1/6W CARBON RES.	
	R311	QRD161J-102	1K 1/6W CARBON RES.	
	R321	QRD161J-102	1K 1/6W CARBON RES.	
	R322	QRD161J-102	1K 1/6W CARBON RES.	
	R323	QRD161J-102	1K 1/6W CARBON RES.	
	R328	QRD161J-101	100 1/6W CARBON RES.	
	R452	QRD161J-102	1K 1/6W CARBON RES.	
	R453	QRD161J-102	1K 1/6W CARBON RES.	
	R454	QRD161J-102	1K 1/6W CARBON RES.	
	R503	QRD161J-243	24K 1/6W CARBON RES.	
	R504	QRD161J-163	16K 1/6W CARBON RES.	
	R505	QRD161J-163	16K 1/6W CARBON RES.	
	R506	QRD161J-243	24K 1/6W CARBON RES.	
	R508	QRD161J-101	100 1/6W CARBON RES.	
	R509	QRD161J-243	24K 1/6W CARBON RES.	
	R510	QRD161J-163	16K 1/6W CARBON RES.	
	R511	QRD161J-243	24K 1/6W CARBON RES.	
	R512	QRD161J-163	16K 1/6W CARBON RES.	
	R513	QRD161J-181	180 1/6W CARBON RES.	
	R515	QRD161J-102	1K 1/6W CARBON RES.	
	R521	QRD167J-682	6.8K 1/6W CARBON RES.	
	R522	QRD167J-682	6.8K 1/6W CARBON RES.	
	R525	QRD161J-362	3.6K 1/6W CARBON RES.	
	R526	QRD161J-362	3.6K 1/6W CARBON RES.	
	R527	QRD161J-162	1.6K 1/6W CARBON RES.	
	R528	QRD161J-162	1.6K 1/6W CARBON RES.	
	R529	QRD161J-183	18K 1/6W CARBON RES.	
	R530	QRD161J-183	18K 1/6W CARBON RES.	
	R533	QRD161J-243	24K 1/6W CARBON RES.	
	R534	QRD161J-243	24K 1/6W CARBON RES.	
	R535	QRD161J-271	270 1/6W CARBON RES.	
	R537	QRD161J-271	270 1/6W CARBON RES.	
	R543	QRD161J-243	24K 1/6W CARBON RES.	
	R544	QRD161J-243	24K 1/6W CARBON RES.	
	R545	QRD161J-273	27K 1/6W CARBON RES.	
	R546	QRD161J-273	27K 1/6W CARBON RES.	
	R547	QRD161J-471	470 1/6W CARBON RES.	
	R548	QRD161J-471	470 1/6W CARBON RES.	
	R551	QRD161J-101	100 1/6W CARBON RES.	
	R552	QRD161J-101	100 1/6W CARBON RES.	
	R553	QRD161J-271	270 1/6W CARBON RES.	
	R555	QRD161J-271	270 1/6W CARBON RES.	
	R561	QRD167J-223	22K 1/6W CARBON RES.	
	R562	QRD167J-223	22K 1/6W CARBON RES.	
	R571	QRD161J-104	100K 1/6W CARBON RES.	
	R573	QRD161J-564	560K 1/6W CARBON RES.	
	R574	QRD161J-684	680K 1/6W CARBON RES.	
	R575	QRD167J-332	3.3K 1/6W CARBON RES.	
	R576	QRD161J-472	4.7K 1/6W CARBON RES.	
	R577	QRD167J-154	150K 1/6W CARBON RES.	
	R578	QRD161J-105	1M 1/6W CARBON RES.	
	R579	QRD161J-393	39K 1/6W CARBON RES.	
	R580	QRD161J-162	1.6K 1/6W CARBON RES.	
	R581	QRD161J-123	12K 1/6W CARBON RES.	
	R582	QRD161J-123	12K 1/6W CARBON RES.	
	R701	QRD161J-561	560 1/6W CARBON RES.	
	R702	QRD161J-561	560 1/6W CARBON RES.	

■ Electrical Parts List (ENN-499)

⚠	Item	Parts Number	Description	Area
		OTHERS		
		EMW10722-003	PRINTED BOARD	
	BLU	QWE886-08RR	VINYL WIRE	
	J701	EMN00TV-223AJ1	PIN JACK	
	J702	EMN00TV-117A	PIN JACK	
	K501	ENZ8101-007	INDUCTOR	
	K502	ENZ8101-007	INDUCTOR	
	K503	ENZ8101-007	INDUCTOR	
	K504	ENZ8101-007	INDUCTOR	
	K505	ENZ8101-007	INDUCTOR	
	ORG	QWE883-08RR	VINYL WIRE	
⚠	P101	QMCB001-E02H	AC SOCKET	
⚠	S151	QSS1L22-E01	SLIDE SWITCH	
	X501	ECX0169-344EA	CRYSTAL	
	YLW	QWE884-09RR	VINYL WIRE	
	CN222	EMV5163-012R	CONNECT TERMINAL	
	CN224	EMV5163-010R	CONNECT TERMINAL	
	CN551	EMV7145-003Z	SOCKET ASSY	
	FW101	EWR35D-20LS	FLAT WIRE	
	PW501	QWE353-08RR	SHIELD WIRE	
	PW502	QWE359-07RR	WIRE	
	SP301	VYH7653-013	IC HOLDER	
	SP501	VYH7653-003	I.C. PROTECTOR	
	SP504	VYH7653-002	I.C. PROTECTOR	

■ Electrical Parts List (ENV-004)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC101	CL480-F1	I.C(MICRO-COMPUTER)	
	IC102	JCE8006-X	I.C(M)	
	IC103	HM514260CJ-7X	I.C(D-RAM)	
	IC104	BU1417K	I.C(DIGI-MOS)	
	IC105	BU2173F-X	I.C(DIGI-MOS)	
	IC106	UPD6461GS-635X	I.C(MICRO-COMPUTER)	
	IC107	PQ20VZ11X	I.C(M)	
	IC108	TC7SH04FU	I.C(DIGI-MOS)	
	IC111	MN171601AK8J2	I.C(MICRO-COMPUTER)	
	IC112	TC55257DFLL85EX	I.C(S-RAM)	
	IC113	HD74HCT244FP-XE	I.C.	
	IC114	HD74HCT245FP-XE	I.C.	
	IC115	TC74VHC02F-X	I.C(DIGI-MOS)	
		DIODES		
	D141	DTZ4.7(B)-X	ZENER DIODE	
		TRANSISTORS		
	Q101	DTA114EKA-X	DIGITAL TRANSISTOR	
		CAPACITORS		
	C101	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C102	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C103	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C105	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C106	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C107	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C110	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C111	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C112	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C113	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C115	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C116	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C122	NCS31HJ-150AY	15PF 50V CER.CAP.	
	C123	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C124	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C125	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C126	NEA20JM-226NZ	22MF 6.3V AL E.CAP.	
	C127	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C131	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C132	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C133	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C134	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C141	NCB31HK-472AY	4700PF 50V CER.CAP.	
	C151	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C152	NEA20JM-226NZ	22MF 6.3V AL E.CAP.	
	C153	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C154	NEA20JM-226NZ	22MF 6.3V AL E.CAP.	
	C155	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C156	NEA20JM-226NZ	22MF 6.3V AL E.CAP.	
	C157	NEA20JM-226NZ	22MF 6.3V AL E.CAP.	
	C158	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	C162	NCS31HJ-681AY	680PF 50V C.CAPA. C.M	
	C168	NCB31HK-152AY	1500PF 50V CER.CAP.	
	C169	NCS31HJ-102AYM	1000PF 50V CER.CAP.	
	C173	NCB31HK-122AY	1200PF 50V CER.CAP.	
	C181	NCF31EZ-104AY	0.1MF 25V CER.CAP.	
	TC101	ENZ1003-017T	010MF TRIMMER CAPA	
		RESISTORS		
	R102	NRSA63J-473NY	METAL GLAZE	
	R103	NRSA63J-103N	METAL GLAZE	
	R104	NRSA63J-105NY	METAL GLAZE	
	R105	NRSA63J-242NY	METAL GLAZE	
	R106	NRSA63J-682NY	METAL GLAZE	
	R107	NRSA63J-112NY	METAL GLAZE	
	R109	NRSA63J-750NY	METAL GLAZE	
	R110	NRSA63J-750NY	METAL GLAZE	
	R111	NRSA63J-182NY	METAL GLAZE	
	R112	NRSA63J-112NY	METAL GLAZE	
	R115	NRSA63J-0R0AY	METAL GLAZE	
	R121	NRSA63J-102NY	METAL GLAZE	
	R122	NRSA63J-102NY	METAL GLAZE	

⚠	Item	Parts Number	Description	Area
	R123	NRSA63J-102NY	METAL GLAZE	
	R124	NRSA63J-102NY	METAL GLAZE	
	R125	NRSA63J-102NY	METAL GLAZE	
	R135	NRSA63J-121NY	METAL GLAZE	
	R141	NRSA63J-750NY	METAL GLAZE	
	R142	NRSA63J-562NY	METAL GLAZE	
	R153	NRSA63J-222NY	METAL GLAZE	
	R154	NRSA63J-331NY	METAL GLAZE	
	R155	NRSA63J-271NY	METAL GLAZE	
	R191	NRSA63J-820NY	METAL GLAZE	
	R192	NRSA63J-820NY	METAL GLAZE	
	R193	NRSA63J-820NY	METAL GLAZE	
	R194	NRSA63J-750NY	METAL GLAZE	
		OTHERS		
		EMW10624-101	PRINTED BOARD	
	K101	ENZ8102-N102AY	FERRITE BEADS	
	K103	ENZ8102-N102AY	FERRITE BEADS	
	L102	VQP1007-2R7Y	INDUCTOR	
	L103	VQP1007-2R7Y	INDUCTOR	
	CN101	EMV7154-215E	CONNECT TERMINAL	
	CN102	EMV5109-012BE	CONNECT TERMINAL	
	CN103	EMV5109-006BE	CONNECT TERMINAL	

■ Electrical Parts List (Changer Control P.C.B.)

⚠	Item	Parts Number	Description	Area
		I.C.S		
	IC801	UPD65612GB-208	I.C(M)	
	IC802	TA8409S	I.C(MONO-ANALOG)	
	IC803	TA8409S	I.C(MONO-ANALOG)	
		CAPACITORS		
	C801	QEK51AM-107	AL E.CAP.	
	C802	QEK51EM-475	AL E.CAP.	
	C803	QFLB1HJ-102	1000PF 50V MYLAR CAP.	
	C804	QCFB1HZ-104Y	0.1MF 50V CER.CAP.	
	C805	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C806	QEK51CM-476	AL E.CAP.	
	C808	QFLB1HJ-102	1000PF 50V MYLAR CAP.	
	C810	QCZ0205-155	1.5MF 25V C.CAP.	
	C811	QCZ0205-155	1.5MF 25V C.CAP.	
	C813	QCVB1CM-103Y	0.01MF 16V CER.CAP.	
	C821	QCBB1HK-102Y	1000PF 50V CER.CAP.	
		RESISTORS		
	R805	QRD161J-102	1K 1/6W CARBON RES.	
	R806	QRD161J-471	470 1/6W CARBON RES.	
	R807	QRD161J-471	470 1/6W CARBON RES.	
	R808	QRD161J-102	1K 1/6W CARBON RES.	
	R810	QRD161J-684	680K 1/6W CARBON RES.	
	R811	QRD161J-105	1M 1/6W CARBON RES.	
	R813	QRD161J-102	1K 1/6W CARBON RES.	
	R814	QRD161J-102	1K 1/6W CARBON RES.	
	R815	QRD161J-102	1K 1/6W CARBON RES.	
	R816	QRD161J-102	1K 1/6W CARBON RES.	
	R817	QRD161J-102	1K 1/6W CARBON RES.	
	R818	QRD161J-102	1K 1/6W CARBON RES.	
	R819	QRD161J-102	1K 1/6W CARBON RES.	

⚠	Item	Parts Number	Description	Area
	R820	QRD161J-102	1K 1/6W CARBON RES.	
	R821	QRD161J-102	1K 1/6W CARBON RES.	
	R822	QRD161J-102	1K 1/6W CARBON RES.	
	R823	QRD161J-102	1K 1/6W CARBON RES.	
	R824	QRD161J-102	1K 1/6W CARBON RES.	
	R825	QRD161J-102	1K 1/6W CARBON RES.	
	R826	QRD161J-102	1K 1/6W CARBON RES.	
	R827	QRD161J-102	1K 1/6W CARBON RES.	
	R828	QRD161J-102	1K 1/6W CARBON RES.	
	R829	QRD161J-102	1K 1/6W CARBON RES.	
	R830	QRD161J-102	1K 1/6W CARBON RES.	
	R832	QRD161J-181	180 1/6W CARBON RES.	
	R833	QRD161J-102	1K 1/6W CARBON RES.	
	R834	QRD161J-102	1K 1/6W CARBON RES.	
	R839	QRD167J-332	3.3K 1/6W CARBON RES.	
	R840	QRD167J-562	5.6K 1/6W CARBON RES.	
		OTHERS		
		VMW1377-004A	PW BOARD	
		SBSF2608Z	TAPPING SCREW	
		VYH7237-001SS	IC HOLDER	
	L801	VQP0018-100	INDUCTOR	
	L802	VQP0033-100Z	INDUCTOR	
	L803	VQP0033-100Z	INDUCTOR	
	L804	VQP0033-100Z	INDUCTOR	
	CN801	VMC0163-R10	CONNECT TERMINAL	
	CN802	VMC0289-P07	CONNECT TERMINAL	
	CN803	VMC0324-12310	CONNECT TERMINAL	
	CN804	VMC0289-S07	CONNECTOR	

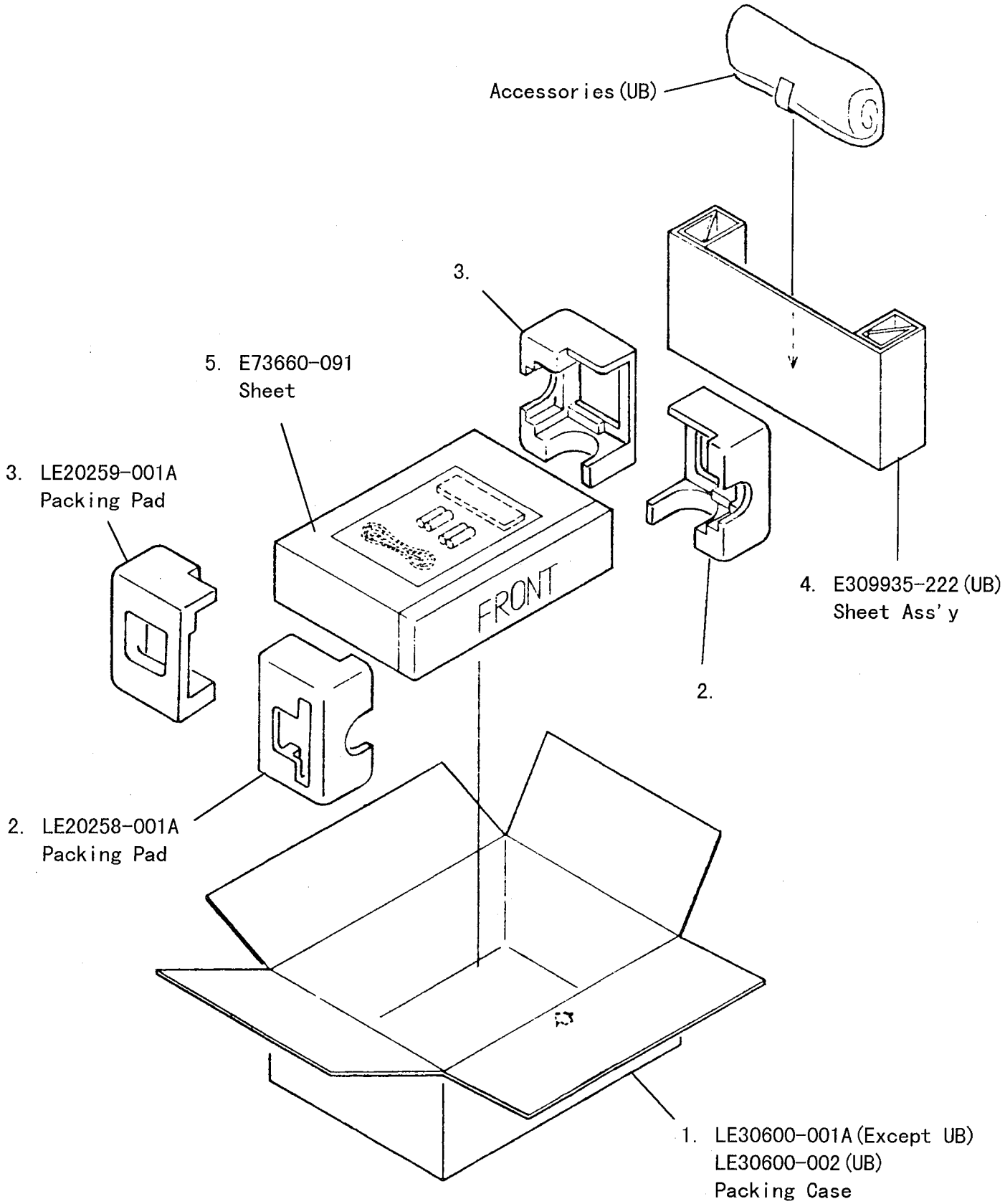
Accessories List

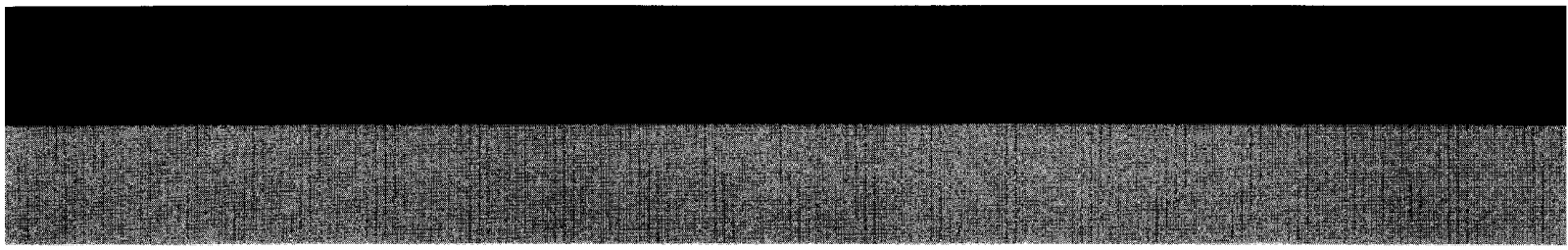
Block No. M 9 M M

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	LET0080-001A	INSTRUCTION BOOK	1		
	2	LET0095-001B	ERRATA SHEET	1		
⚠	3	QMP39F0-183E	POWER CORD	1		US
⚠		QMP5520-1835BS	POWER CORD	1		UB
⚠		QMP7530-183	POWER CORD	1		U UF UT
	4	E309758-003	ENVELOPE	2		UB
		E309758-003	ENVELOPE	1		Except UB
	5	ENZ2203-001	ADAPTOR PLUG	1		U UT
⚠	6	ENZ2202-001	SIEMENS PLUG	1		US
	8	PEAC0359-120	SIGNAL CORD	1		
	9	RM-SXMV55U	WIRE-LESS REMOTE CONTROL	1		
	10	R6SPTT-2ST	BATTERY	2		

Packing Materials and Part Numbers

Block No. M 10 M M





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